EATON | Powerware

Powerware® 9135 Two-in-One UPS
5000/6000 VA
User's Guide

Requesting a Declaration of Conformity

Units that are labeled with a CE mark comply with the following harmonized standards and EU directives:

- Harmonized Standards: EN 62040-1-1 and EN 62040-2; IEC 60950-1
- EU Directives: 73/23/EEC, Council Directive on equipment designed for use within certain voltage limits
  93/68/EEC, Amending Directive 73/23/EEC
  2004/108/EEC, Council Directive relating to electromagnetic compatibility

The EC Declaration of Conformity is available upon request for products with a CE mark. For copies of the EC Declaration of Conformity, contact:

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Class A EMC Statements

FCC Part 15

NOTE This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

EN 62040-2

Some configurations are classified under EN 62040-2 as "Category C2 UPS." For these configurations, the following applies:

WARNING This is a category C2 UPS product. In a residential environment, this product may cause radio interference, in which case the user may be required to take additional measures.

Special Symbols

The following are examples of symbols used on the UPS or accessories to alert you to important information:

RISK OF ELECTRIC SHOCK - Observe the warning associated with the risk of electric shock symbol.

CAUTION: REFER TO OPERATOR'S MANUAL - Refer to your operator's manual for additional information, such as important operating and maintenance instructions.

This symbol indicates that you should not discard the UPS or the UPS batteries in the trash. This product contains sealed, lead-acid batteries and must be disposed of properly. For more information, contact your local recycling/reuse or hazardous waste center.

This symbol indicates that you should not discard waste electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.

Table of Contents

Chapter 1 Introduction

The Powerware® 9135 uninterruptible power system (UPS) protects your sensitive electronic equipment from the most common power problems including power failures, power sags, power surges, brownouts, line noise, high voltage spikes, frequency variations, switching transients, and harmonic distortion.

Power outages can occur when you least expect it and power quality can be erratic. These power problems have the potential to corrupt critical data, destroy unsaved work sessions, and damage hardware — causing hours of lost productivity and expensive repairs.

With the Powerware 9135, you can safely eliminate the effects of power disturbances and guard the integrity of your equipment. Figure 1 shows the Powerware 9135 UPS.

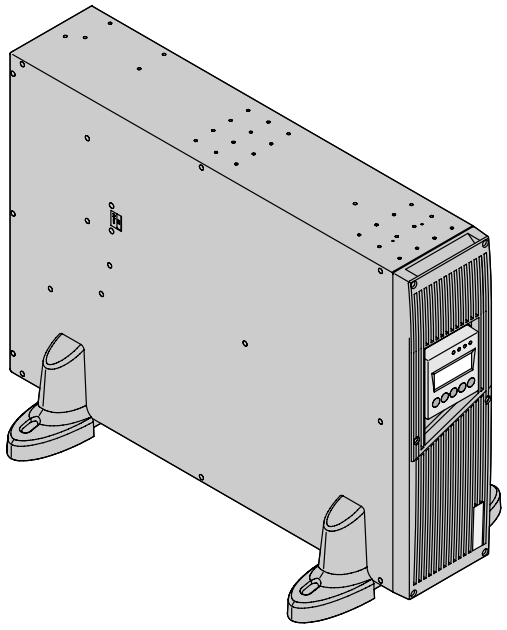


Figure 1. The Powerware 9135 UPS

Providing outstanding performance and reliability, the Powerware 9135's unique benefits include:

- Online UPS design with pure sine wave output. The UPS filters and regulates incoming AC power and provides consistent power to your equipment without draining the battery.
- Two-in-one form factor for using the UPS in a rack-mount configuration or as a standalone cabinet.
- Hours of extended runtime with up to four EBMs per UPS.
- Start-on-battery capability for powering up the UPS even if utility power is not available.
- Hot-swappable power module and battery tray that simplify maintenance by allowing you to replace them safely without powering down the critical load.
- Shutdown control through the remote power-off (RPO) port.
- Two standard communication options with a USB port and an RS-232 serial port.
- Advanced power management for graceful shutdowns and power monitoring.
- For EU models—sequential shutdown and load management through separate receptacle groups, called load segments (PowerShare).
- Optional communication cards with enhanced communication capabilities for increased power protection and control.
- Backed by worldwide agency approvals.

Chapter 2 Safety Warnings

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

This manual contains important instructions that you should follow during installation and maintenance of the UPS and batteries. Please read all instructions before operating the equipment and save this manual for future reference.

DANGER

This UPS contains **LETHAL VOLTAGES**. All repairs and service should be performed by **AUTHORIZED SERVICE PERSONNEL ONLY**. There are **NO USER SERVICEABLE PARTS** inside the UPS.

WARNING

- This UPS contains its own energy source (batteries). The UPS output may carry live voltage even when the UPS is not connected to an AC supply.
- For 208–240V models, the output receptacles may remain electrically live. If the input power source in your application is wired line-to-neutral (as in most European applications), the voltage to the output receptacles is 0V. With line-to-line input wiring, the voltage to the output receptacles is 110–120V (measured from line-to-ground or line-to-neutral, depending on the UPS wiring).
- Do not remove or unplug the input cord when the UPS is turned on. This removes the safety ground from the UPS and the equipment connected to the UPS.
- To reduce the risk of fire or electric shock, install this UPS in a temperature and humidity controlled, indoor environment, free of conductive contaminants. Ambient temperature must not exceed 40°C (104°F). Do not operate near water or excessive humidity (95% maximum).
- To comply with international standards and wiring regulations, the sum of the leakage current of the UPS and the total equipment connected to the output of this UPS must not have an earth leakage current greater than 3.5 milliamperes.

CAUTION

- Batteries can present a risk of electrical shock or burn from high short-circuit current. Observe proper precautions. Servicing should be performed by qualified service personnel knowledgeable of batteries and required precautions. Keep unauthorized personnel away from batteries.
- Proper disposal of batteries is required. Refer to your local codes for disposal requirements.
- Never dispose of batteries in a fire. Batteries may explode when exposed to flame.
- Replace batteries with the same number and type of batteries as originally installed in the UPS.

Sikkerhedsanvisninger

VIGTIGE SIKKERHEDSANVISNINGER
GEM DISSE ANVISNINGER

Denne manual indeholder vigtige instruktioner, som skal følges under installation og vedligeholdelse af UPS'en og batterierne. Læs venligst alle instruktioner inden betjening af udstyret og gem denne manual mhp. fremtidige opslag.

FARE

Denne UPS indeholder LIVSFARLIG HØJSPÆNDING. Alle reparationer og vedligeholdelse bør kun udføres af en AUTORISERET SERVICETEKNIKER. Ingen af UPS'ens indvendige dele kan repareres af brugeren.

ADVARSEL!

- Denne UPS indeholder sin egen energikilde (batterier). Udgangsstikket på UPS'en kan endog være strømførende, når UPS'en ikke er koblet til en vekselstrømsforsyning.
- På 230V-modeller kan udgangsstikkene være strømførende. Hvis ledningsføringen til indgangsstrømkilden på din enhed er fase-til-neutral (som på de fleste europæiske enheder), er spændingen til udgangsstikkene 0V. Med en fase-til-fase indgangsledningsføring er spændingen til udgangsstikkene 115V (målt fra fase-til-jord eller fase-til-neutral, afhængig af UPS-ledningsføringen).
- Netledningen må ikke fjernes og stikket må ikke trækkes ud, mens UPS'en er tændt. Dette fjerner sikkerhedsjorden fra UPS'en og fra det udstyr, der er sat til.
- Installér denne UPS i et temperatur- og fugtighedskontrolleret indendørsmiljø, frit for ledende forureningsstoffer for at formindske risikoen for brand og elektrisk stød. Rumtemperaturen må ikke overstige 40°C. UPS'en bør ikke betjenes nær vand eller høj fugtighed (maksimalt 95%).

- I overensstemmelse med internationale normer og bestemmelser for el-installation må det udstyr, der er forbundet til udgangen af denne UPS, tilsammen ikke overskride en jordafdelingsspænding på mere end 3,5 milliampere.

ADVARSEL

- Batterierne kan give risiko for elektrisk stød eller brandsår forårsaget af høj kortslutningsstrøm. Overhold gældende forsigtighedsregler. Servicering skal udføres af kvalificeret servicepersonale med kendskab til batterier og gældende forsigtighedsregler. Hold uautoriseret personale væk fra batterierne.
- Korrekt bortskaffelse af batterier er påkrævet. Overhold gældende lokale regler for bortskaffelsesprocedurer.
- Skaf dig aldrig af med batterierne ved at brænde dem. Batterierne kan eksplodere ved åben ild.
- Udskift batterierne med samme batterinummer og -type som de oprindeligt installerede i UPS'en.

Belangrijke Veiligheidsinstructies

BELANGRIJKE VEILIGHEIDSINSTRUCTIES BEWAAR DEZE INSTRUCTIES

Deze handleiding bevat belangrijke instructies die u dient te volgen tijdens de installatie en het onderhoud van de UPS en de accu's. Lees alle instructies voordat u de apparatuur in bedrijf neemt en bewaar deze handleiding als naslagwerk.

GEVAAR

Deze UPS bevat LEVENSGEVAARLIJKE ELEKTRISCHE SPANNING. Alle reparaties en onderhoud dienen UITSLUITEND DOOR ERKEND SERVICEPERSONEEL te worden uitgevoerd. Er bevinden zich GEEN ONDERDELEN in de UPS die DOOR DE GEBRUIKER kunnen worden GEREPAREERD.

WAARSCHUWING

- Deze UPS bevat een eigen energiebron (accu's). De UPS-uitgang kan onder spanning staan, zelfs wanneer de UPS niet is aangesloten op de netspanning.
- Bij de modellen van 230V kan de uitgangscontactdoos onder spanning blijven staan. Als de bedrading van de ingangsspanningsbron in uw systeem loopt van fase naar aarde (zoals bij de meeste Europese systemen) dan bedraagt de spanning op de uitgangscontactdozen 0 V. Als de ingangsbedrading loopt van fase naar fase dan bedraagt de spanning op de uitgangscontactdozen 115V (gemeten tussen fase en aarde of tussen fase en neutraal, afhankelijk van de UPS-bedrading).

- Verwijder de ingangsnoer niet of haal de stekker van de ingangsnoer er niet uit terwijl de UPS aan staat. Hierdoor zou de UPS en uw aangesloten apparatuur geen aardebeveiliging meer hebben.
- Teneinde de kans op brand of elektrische schok te verminderen dient deze UPS in een gebouw met temperatuur- en vochtigheidregeling te worden geïnstalleerd, waar geen geleidende verontreinigingen aanwezig zijn. De omgevingstemperatuur mag 40°C niet overschrijden. Niet gebruiken in de buurt van water of bij zeer hoge vochtigheid (max. 95%).
- Om aan de internationale normen en bedradingsvoorschriften te voldoen mag de gehele apparatuur die op de uitgang van deze UPS is aangesloten, geen aardlekstroom van meer dan 3,5 milliampère hebben.

OPGELET

- Batterijen leveren gevaar op voor elektrische schokken en kunnen brandwonden veroorzaken door een grote kortsluitstroom. Neem de juiste voorzorgsmaatregelen in acht. Het onderhoud moet worden uitgevoerd door bevoegde onderhoudsmonteurs die verstand hebben van accu's en op de hoogte zijn van de vereiste voorzorgsmaatregelen. Houd onbevoegden uit de buurt van de accu's.
- De batterijen moeten op de juiste wijze worden opgeruimd. Raadpleeg hiervoor uw plaatselijke voorschriften.
- Nooit batterijen in het vuur gooien. De batterijen kunnen ontploffen.
- Vervang de accu's door accu's met hetzelfde nummer en van hetzelfde type als de oorspronkelijke accu's in de UPS.

Tarkeita Turvaohjeita

TÄRKEITÄ TURVAOHJEITA - SUOMI
SÄILYTÄ NÄMÄ OHJEET

Tämä käyttöohje sisältää tärkeitä ohjeita, joita on noudatettava UPS-virtalähteen ja akkujen asennuksen ja huollon yhteydessä. Lue kaikki ohjeet ennen laitteiston käyttöä ja säilytä ohje myöhempää tarvetta varten.

VAARA

Tämä UPS sisältää HENGENVAARALLISIA JÄNNITTEITÄ. Kaikki korjaukset ja huollot on jätettävä VAIN VALTUUTETUN HUOLTOHENKILÖN TOIMEKSI. UPS ei sisällä MITÄÄN KÄYTTÄJÄN HUOLLETTAVIA OSIA.

VAROITUS

- Tässä UPS-virtalähteessä on oma energianlähde (akut). UPS-virtalähteen lähdössä voi olla jännite, vaikka UPS-virtalähdettä ei ole kytketty verkkovirtaan.
- 230V -malleissa lähtövastakkeissa voi säilyä jännite. Jos sovelluksen tulovirtalähde on johdotettu linjasta neutraaliin (kuten useimmissa eurooppalaisissa sovelluksissa) lähtövastakkeiden jännite on 0 V. Linjasta linjaan –tulojohdotuksessa lähtövastakkeiden jännite on 115V (mitataan linjasta maahan tai linjasta neutraaliin, UPS-virtalähteen johdotuksesta riippuen).
- Älä poista tai irrota sisääntulojohtoa, kun UPS on kytkettynä. Tämä poistaa turvamaadoituksen UPS-laitteesta ja siihen liitetystä laitteistosta.
- Vähentääksesi tulipalon ja sähköiskun vaaraa asenna tämä UPS sisätiloihin, joissa lämpötila ja kosteus on säädettävissä ja joissa ei ole virtaa johtavia epäpuhtauksia. Ympäristön lämpötila ei saa ylittää 40 °C. Älä käytä lähellä vettä ja vältä kosteita tiloja (95 % maksimi).
- Kansainväliset normit ja johdotusmääräykset vaativat, että kaikkien tämän UPS-laitteen ulostulokytkentöjen yhteinen maavuotovirta ei ylitä 3,5 milliampeeria (mA).

VARO

- Akut voivat aiheuttaa sähköiskun tai palovammojen vaaran johtuen suuresta oikosulkuvirrasta. Noudata kaikkia asianmukaisia varotoimia. Laitteen saa huoltaa vain ammattitaitoinen huoltohenkilökunta, joka tuntee akut ja niihin liittyvät varotoimet. Älä päästä valtuuttamatonta henkilöstöä lähelle akkuja.
- Akusto täytyy hävittää säädösten mukaisella tavalla. Noudata paikallisia määräyksiä.
- Älä koskaan heitä akkuja tuleen. Ne voivat räjähtää.
- Vaihda UPS-virtalähteeseen vain samanlaiset akut ja sama määrä akkuja kuin siinä oli alun perin.

Consignes de sécurité

CONSIGNES DE SÉCURITÉ IMPORTANTES CONSERVER CES INSTRUCTIONS

Ce manuel comporte des instructions importantes que vous êtes invité à suivre lors de toute procédure d'installation et de maintenance des batteries et de l'onduleur. Veuillez consulter entièrement ces instructions avant de faire fonctionner l'équipement et conserver ce manuel afin de pouvoir vous y reporter ultérieurement.

DANGER!

Cet onduleur contient des TENSIONS MORTELLES. Toute opération d'entretien et de réparation doit être EXCLUSIVEMENT CONFIÉE A UN PERSONNEL QUALIFIÉ AGRÉÉ. AUCUNE PIÈCE RÉPARABLE PAR L'UTILISATEUR ne se trouve dans l'onduleur.

AVERTISSEMENT!

- Cette onduleur possède sa propre source d'alimentation (batteries). Il est possible que la sortie de l'onduleur soit sous tension même lorsque l'onduleur n'est pas connectée à une alimentation CA.
- En ce qui concerne les modèles 230 V, il est possible que les prises de sortie restent sous tension. Si la source d'alimentation de votre application est câblée phase et neutre (comme dans la majorité des applications européennes), la tension vers les prises de sortie est de 0 V. Avec un câblage d'entrée phase à phase, la tension vers les prises de sortie est de 115 V (mesurée entre phase et terre ou phase et neutre suivant le câblage de l'onduleur).
- Ne pas retirer le cordon d'alimentation lorsque l'onduleur est sous tension sous peine de supprimer la mise à la terre de l'onduleur et du matériel connecté.
- Pour réduire les risques d'incendie et de décharge électrique, installer l'onduleur uniquement à l'intérieur, dans un lieu dépourvu de matériaux conducteurs, où la température et l'humidité ambiantes sont contrôlées. La température ambiante ne doit pas dépasser 40 °C. Ne pas utiliser à proximité d'eau ou dans une atmosphère excessivement humide (95 % maximum).
- Afin d'être conforme aux normes et règlements internationaux de câblage, le courant de fuite à la terre de la totalité du matériel branché sur la sortie de l'onduleur ne doit pas dépasser 3,5 mA.

ATTENTION!

- Les batteries peuvent présenter un risque de choc électrique ou de brûlure provenant d'un courant de court-circuit haute intensité. Observez les précautions appropriées. L'entretien doit être réalisé par du personnel qualifié connaissant bien les batteries et les précautions nécessaires. N'autorisez aucun personnel non qualifié à manipuler les batteries.
- Une mise au rebut réglementaire des batteries est obligatoire. Consulter les règlements en vigueur dans votre localité.
- Ne jamais jeter les batteries au feu. L'exposition aux flammes risque de les faire exploser.
- Remplacez les batteries par des batteries du même type et numéro que celles installées à l'origine sur l'onduleur.

Sicherheitswarnungen

WICHTIGE SICHERHEITSANWEISUNGEN AUFBEWAREN

Dieses Handbuch enthält wichtige Anweisungen, die Sie während der Installation und Wartung des USV (Unterbrechungsfreies Stromversorgungssystem) und der Batterien befolgen müssen. Bitte lesen Sie alle Anweisungen des Handbuches bevor sie mit dem Gerät arbeiten. Bewaren Sie das Handbuch zum Nachlesen auf.

WARNUNG

Die USV führt lebensgefährliche Spannungen. Alle Reparatur- und Wartungsarbeiten sollten nur von Kundendienstfachleuten durchgeführt werden. Die USV enthält keine vom Benutzer zu wartenden Komponenten.

ACHTUNG

- Dieses USV (Unterbrechungsfreies Stromversorgungssystem) enthält eine eigene Energiequelle (Batterien). Der USV-Ausgang kann Spannung führen, auch wenn das USV nicht an eine Wechselstromquelle angeschlossen ist.
- Bei Modellen mit 208–240 Volt können die Ausgangssteckverbinder stromführend bleiben. Wenn die Eingangsstromquelle in Ihrer Anlage mit Masseleitung verkabelt ist (wie in den meisten europäischen Anlagen), beträgt die Spannung an den Ausgangssteckverbindern 0 Volt. Bei einer Verkabelung mit Außenleitern beträgt die Spannung an den Ausgangssteckverbindern 110–120 Volt (gemessen von Leitung zu Masse oder Leitung zu Masseleiter, abhängig von der UPS (USV)-Verkabelung.

- Das Eingangskabel nicht entfernen oder abziehen, während die USV eingeschaltet ist, weil hierdurch die Sicherheitserdung von der USV und den daran angeschlossenen Geräten entfernt wird.
- Um die Brand- oder Elektroschockgefahr zu verringern, diese USV nur in Gebäuden mit kontrollierter Temperatur und Luftfeuchtigkeit installieren, in denen keine leitenden Schmutzstoffen vorhanden sind. Die Umgebungstemperatur darf 40°C nicht übersteigen. Die USV nicht in der Nähe von Wasser oder in extrem hoher Luftfeuchtigkeit (max. 95 %) betreiben.
- Um internationale Normen und Verdrahtungsvorschriften zu erfüllen, dürfen die an den Ausgang dieser USV angeschlossenen Geräte zusammen einen Erdableitstrom von insgesamt 3,5 Milliampere nicht überschreiten.

VORSICHT!

- Batterien können das Risiko eines elektrischen Schlags bergen oder durch hohen Kurzschlussstrom in Brand geraten. Die richtigen Vorsichtsmaßnahmen beachten. Die Wartung muss von qualifiziertem Wartungspersonal durchgeführt werden, das im Umgang mit Batterien geübt ist und über gute Kenntnisse der erforderlichen Vorsichtsmaßnahmen verfügt. Nicht autorisiertes Personal von Batterien fern halten.
- Die Batterien müssen ordnungsgemäß entsorgt werden. Hierbei sind die örtlichen Bestimmungen zu beachten.
- Batterien niemals verbrennen, da sie explodieren können.
- Falls Sie die Batterien austauschen, verwenden Sie bitte ausschließlich die gleiche Anzahl und die Batterietypen.

Avvisi di sicurezza

IMPORTANTI ISTRUZIONI DI SICUREZZA CONSERVARE QUESTE ISTRUZIONI

Il presente manuale contiene importanti istruzioni da seguire durante l'installazione e la manutenzione dell'UPS e delle batterie. Leggere integralmente le istruzioni prima di utilizzare l'apparecchiatura e conservare il presente manuale per futuro riferimento.

PERICOLO

La TENSIONE contenuta in questo gruppo statico di continuità è LETALE. Tutte le operazioni di riparazione e di manutenzione devono essere effettuate ESCLUSIVAMENTE DA PERSONALE TECNICO AUTORIZZATO. All'interno del gruppo statico di continuità NON vi sono PARTI RIPARABILI DALL'UTENTE.

AVVERTENZA

- L'UPS contiene la propria fonte di energia (batterie). Le prese d'uscita dell'UPS possono essere sotto tensione anche quando l'UPS non è collegato all'alimentazione elettrica CA.
- Nei modelli da 230 V è possibile che le prese d'uscita rimangano sotto tensione. Se la fonte di alimentazione in entrata dell'installazione è costituita da un collegamento linea-neutro (come accade nella maggior parte delle installazioni europee), la tensione delle prese d'uscita è pari a 0 V. Con un cablaggio in entrata del tipo linea-linea, la tensione sulle prese d'uscita è 115 V (con misurazione effettuata da linea a terra o da linea a neutro in base al cablaggio dell'UPS).
- Non rimuovere nè scollegare il cavo di ingresso quando il gruppo statico di continuità è acceso poichè in tal modo si disattiverebbe il collegamento a terra di sicurezza del gruppo statico di continuità e dell'apparecchiatura ad esso collegata.
- Per ridurre il rischio di incendio o di scossa elettrica, installare il gruppo statico di continuità in un ambiente interno a temperatura ed umidità controllata, privo di agenti contaminanti conduttivi. La temperatura ambiente non deve superare i 40°C. Non utilizzare l'unità in prossimità di acqua o in presenza di umidità eccessiva (95% max).
- Per conformità con gli standard internazionali e con le norme in merito al cablaggio, tutta l'apparecchiatura collegata con l'uscita del gruppo statico di continuità non deve avere una corrente di dispersione di terra superiore a 3,5 milliampere.

ATTENZIONE

- Le batterie possono comportare un rischio di scossa elettrica o di ustione in seguito a un'elevata corrente di corto circuito. Osservare le dovute precauzioni. L'assistenza deve essere eseguita da personale qualificato esperto di batterie e delle necessarie precauzioni. Tenere il personale non autorizzato lontano dalle batterie.
- Le batterie devono essere smaltite in modo corretto. Per i requisiti di smaltimento fare riferimento alle disposizioni locali.
- Non gettare mai le batterie nel fuoco poichè potrebbero esplodere se esposte alle fiamme.
- Sostituire le batterie con altre dello stesso numero e tipo di quelle originariamente installate nell'UPS.

Viktig Sikkerhetsinformasion

VIKTIGE SIKKERHETSINSTRUKSJONER
GJEM DISSE INSTRUKSJONENE

Denne håndboken inneholder viktige instruksjoner som du bør overholde ved montering og vedlikehold av UPS-enheten og batteriene. Les alle instruksjoner før utstyret tas i bruk, og gjem håndboken til fremtidig referanse.

FARLIG

Denne UPS'en inneholder LIVSFARLIGE SPENNINGER. All reparasjon og service må kun utføres av AUTORISERT SERVICEPERSONALE. BRUKERE KAN IKKE UTFØRE SERVICE PÅ NOEN AV DELENE i UPS'en.

FARLIG

- UPS-enheten inneholder sin egen energikilde (batterier). UPS-utgangen kan være strømførende selv når UPS-enheten ikke er koblet til et strømuttak.
- Utgangsstikkene kan være strømførende for 230V modellene. Spenningen til utgangsstikkene vil være 0 V dersom din enhets strømkilde er fase-til-nøytral (som på de fleste europeiske enheter). Med ledningsført fase-til-fase inngang vil spenningen til utgangsstikkene være 115V (målt fra fase-til-jord eller fase-til-nøytral, avhenging av UPS-ledningsføringen).
- For å redusere fare for brann eller elektriske støt, bør denne UPS'en installeres i et innendørs miljø med kontrollert temperatur og luftfuktighet som er fritt for ledende, forurensende stoffer. Romtemperaturen må ikke overskride 40°C. Den må ikke brukes i nærheten av vann eller ved meget høy luftfuktighet (95% maks.).
- For å redusere fare for brann eller elektriske støt, bør denne UPS'en installeres i et innendørs miljø med kontrollert temperatur og luftfuktighet som er fritt for ledende, forurensende stoffer. Romtemperaturen må ikke overskride 40°C. Den må ikke brukes i nærheten av vann eller ved meget høy luftfuktighet (95% maks.).
- Alt utstyr som er forbundet med utgangen av denne UPS'en må ikke ha en sterkere total lekkasjestrøm enn 3,5 milliampere for å være i overensstemmelse med internasjonale standarder og forkablingsbestemmelser.

FORSIKTIG

- Batterier kan utgjøre en fare for elektrisk støt eller brannsår pga. høy kortsluttingsstrøm. Treff passende forholdsregler. Service bør utføres av kvalifisert servicepersonale med kjennskap til batterier og nødvendige forholdsregler. Hold uautorisert personale borte fra batteriene.
- Batterier må fjernes på korrekt måte. Se lokale forskrifter vedrørende krav om fjerning av batterier.
- Kast aldri batterier i flammer, da de kan eksplodere, hvis de utsettes for åpen ild.
- Skift ut originalbatteriene i UPS-enheten med samme antall og type.

Regulamentos de Segurança

INSTRUÇÕES DE SEGURANÇA IMPORTANTES GUARDE ESTAS INSTRUÇÕES

Este manual contém instruções importantes que devem ser seguidas durante a instalação e manutenção do no-break e das baterias. Leia todas as instruções antes de operar o equipamento e guarde este manual para consultá-lo futuramente.

CUIDADO

A UPS contém VOLTAGEM MORTAL. Todos os reparos e assistência técnica devem ser executados SOMENTE POR PESSOAL DA ASSISTÊNCIA TÉCNICA AUTORIZADO. Não há nenhuma PEÇA QUE POSSA SER REPARADA PELO USUÁRIO dentro da UPS.

ADVERTÊNCIA

- Este no-break possui sua própria fonte de energia (baterias). A saída do no-break pode estar energizada mesmo que este não esteja conectado a uma fonte de energia elétrica.
- Nos modelos 230V, pode ser que as tomadas de saída permaneçam energizadas. Se a alimentação da sua aplicação for do tipo fase-neutro (como ocorre na maioria das aplicações na Europa), a tensão das tomadas de saída é de 0 V. Com a alimentação fase-fase, a tensão das tomadas de saída é de 115V (medida como fase-terra ou fase-neutro, dependendo da instalação elétrica do no-break).
- Não remova ou desconecte o cabo de entrada quando a UPS estiver ligada. Isto removerá o aterramento de segurança da UPS e do equipamento conectado.

- Para reduzir o risco de incêndios ou choques elétricos, instale a UPS em ambiente interno com temperatura e umidade controladas e livres de contaminadores condutíveis. A temperatura ambiente não deve exceder 40°C. Não opere próximo a água ou em umidade excessiva (máx: 95%).
- Para estar de acordo com os padrões internacionais e os regulamentos de fiação, o equipamento total conectado à saída desta UPS não deve ter uma corrente de fuga à terra maior que 3,5 miliampères.

PERIGO

- As baterias podem oferecer risco de choque elétrico ou queimadura, ocasionados por alta tensão com possibilidade de curto-circuito. Tome as precauções adequadas. A manutenção deve ser realizada por pessoal qualificado, com conhecimento sobre baterias e ciente das precauções exigidas. Mantenha o pessoal não autorizado afastado das baterias.
- Siga as instruções apropriadas ao desfazer-se das baterias. Consulte os códigos do local para maiores informações sobre os regulamentos de descarte de produtos.
- Nunca jogue as baterias no fogo, porque há risco de explosão.
- Ao realizar a troca das baterias, utilize a mesma quantidade e o mesmo tipo de bateria instalada originalmente no no-break.

Предупреждения по мерам безопасности

ВАЖНЫЕ УКАЗАНИЯ ПО МЕРАМ БЕЗОПАСНОСТИ СОХРАНИТЕ ЭТИ УКАЗАНИЯ

В данном руководстве содержатся важные инструкции по установке и обслуживанию источника бесперебойного питания (ИБП) и батарей. Перед работой с оборудованием прочтите все инструкции. Сохраните данное руководство для дальнейшего использования.

ОПАСНО

В данном ИБП имеются СМЕРТЕЛЬНО ОПАСНЫЕ НАПРЯЖЕНИЯ. Все работы по ремонту и обслуживанию должны выполняться ТОЛЬКО УПОЛНОМОЧЕННЫМ ОБСЛУЖИВАЮЩИМ ПЕРСОНАЛОМ. Внутри ИБП нет узлов, ОБСЛУЖИВАЕМЫХ ПОЛЬЗОВАТЕЛЕМ.

ПРЕДУПРЕЖДЕНИЕ

- В данном ИБП установлены собственные источники энергии (батареи). В ИБП может иметься напряжение даже в том случае, если он не подключен к сети переменного тока.
- На выходных розетках моделей с напряжением 230 В может быть напряжение. Если устройство рассчитано на тип подключения “фаза-нейтраль” (как большинство устройств, изготавливаемых в Европе), напряжение на выходных розетках равно 0 В. При типе подключения “фаза-фаза” напряжение на выходных розетках составляет 115 В (при измерении “фаза-земля” или “фаза-нейтраль”, в зависимости от электрической схемы ИБП).
- Не отсоединяйте сетевой шнур и не извлекайте его вилку из розетки при включенном ИБП. При этом защитное заземление отключается от ИБП и от оборудования, подключенного к ИПБ.
- Для снижения опасности пожара или поражения электрическим током устанавливайте ИБП в закрытом помещении с контролируемыми температурой и влажностью, в котором отсутствуют проводящие загрязняющие вещества. Температура окружающего воздуха не должна превышать 40°C. Не эксплуатируйте устройство около воды или в местах с повышенной влажностью (макс. 95%).
- Для обеспечения соблюдения требований международных стандартов и требований к разводке электрических цепей, суммарная величина тока утечки на землю всего оборудования, подключенного к выходу ИБП, не должна превышать 3,5 миллиампера.

ОСТОРОЖНО

- Высокое напряжение, вызванное коротким замыканием в батарее, может привести к поражению электрическим током или ожогу. Соблюдайте меры предосторожности. Техническое обслуживание должно осуществляться квалифицированным персоналом по работе с источниками питания, знакомым с мерами предосторожности. Не допускайте к работе с батареями посторонних.
- Необходимо соблюдать правила утилизации аккумуляторов. Обратитесь к местным нормативным актам за информацией о требованиях к утилизации.
- Никогда не бросайте аккумуляторы в огонь. Аккумуляторы могут взорваться под воздействием огня.
- Заменяйте батареи ИБП только таким же количеством батарей аналогичного типа.

Advertencias de Seguridad

INSTRUCCIONES DE SEGURIDAD IMPORTANTES GUARDE ESTAS INSTRUCCIONES

Este manual contiene instrucciones importantes que debe seguir durante la instalación y el mantenimiento del SIE y de las baterías. Por favor, lea todas las instrucciones antes de poner en funcionamiento el equipo y guarde este manual para referencia en el futuro.

PELIGRO

Este SIE contiene VOLTAJES MORTALES. Todas las reparaciones y el servicio técnico deben ser efectuados SOLAMENTE POR PERSONAL DE SERVICIO TÉCNICO AUTORIZADO. No hay NINGUNA PARTE QUE EL USUARIO PUEDA REPARAR dentro del SIE.

ADVERTENCIA

- Este SIE contiene su propia fuente de energía (baterías). La salida del SIE puede transportar voltaje activo aun cuando el SIE no esté conectado con una fuente de CA.
- Para los modelos 230V, es posible que los receptáculos de salida permanezcan eléctricamente activos. Si la fuente de energía de entrada de su aplicación está cableada de línea a neutro (como la mayoría de las aplicaciones europeas), el voltaje a los receptáculos de salida es 0V. Con cableado de entrada de línea a línea, el voltaje hacia los receptáculos de salida es 115V (medido de línea a tierra o de línea a neutro, lo que dependerá del cableado del SIE).
- No retire o desenchufe el cable de entrada mientras el SIE se encuentre encendido. Esto suprime la descarga a tierra de seguridad del SIE y de los equipos conectados al SIE.
- Para reducir el riesgo de incendio o de choque eléctrico, instale este SIE en un lugar cubierto, con temperatura y humedad controladas, libre de contaminantes conductores. La temperatura ambiente no debe exceder los 40°C. No trabaje cerca del agua o con humedad excesiva (95% máximo).
- Para cumplir con los estándares internacionales y las normas de instalación, la totalidad de los equipos conectados a la salida de este SIE no debe tener una intensidad de pérdida a tierra superior a los 3,5 miliamperios.

PRECAUCIÓN

- Las baterías pueden constituir un riesgo de descarga eléctrica o quemaduras por corriente alta de corto circuito. Adopte las precauciones debidas. Personal calificado de servicio que conozca de baterías y esté al tanto de las precauciones requeridas debe darle servicio al equipo. Mantenga al personal no autorizado alejado de las baterías.
- Es necesario desechar las baterías de un modo adecuado. Consulte las normas locales para conocer los requisitos pertinentes.
- Nunca deseche las baterías en el fuego. Las baterías pueden explotar si se las expone a la llama.
- Reemplace las baterías con el mismo número y tipo de baterías como se instalaron originalmente en el SAI.

Säkerhetsföreskrifter

VIKTIGA SÄKERHETSFÖRESKRIFTER SPARA DESSA FÖRESKRIFTER

Den här anvisningen innehåller viktiga instruktioner som du ska följa under installation och underhåll av UPS-enheten och batterierna. Läs alla instruktioner innan du använder utrustningen och spara den här anvisningen för framtida referens.

FARA

Denna UPS-enhet innehåller LIVSFARLIG SPÄNNING. ENDAST AUKTORISERAD SERVICEPERSONAL får utföra reparationer eller service. Det finns inga delar som ANVÄNDAREN KAN UTFÖRA SERVICE PÅ inuti UPS-enheten.

VARNING

- Den här UPS-enheten innehåller sin egen energikälla (batterier). UPS-enhetens uttag kan vara spänningsförande även då UPS-enheten inte är ansluten till spänningsnätet.
- På modellerna 230 V kan de utgående uttagen fortfarande vara strömförande. Om den ingående strömkällan i din applikation är kopplad ledare-till-nolla (det vanligaste i Europa) är spänningen till de utgående uttagen 0 V. Är den ingående strömkällan kopplad ledare-till-ledare är spänningen i de utgående uttagen 115 V (uppmätt från ledare-till-jord eller ledare-till-nolla beroende på UPS:ens anslutning).
- Ta aldrig bort nätsladden när UPS-enheten är påslagen. Detta tar bort skyddsjordningen från både UPS-enheten och den anslutna utrustningen.

- Minska risken för brand eller elektriska stötar genom att installera denna UPS-enhet inomhus, där temperatur och luftfuktighet är kontrollerade och där inga ledande föroreningar förekommer. Omgivande temperatur får ej överstiga 40°C. Använd inte utrustningen nära vatten eller vid hög luftfuktighet (max 95 %).
- För att överensstämma med internationell standard och installationsföreskrifter får inte den totala utrustning som anslutits till uttagen på denna UPS-enhet ha läcksström som överstiger 3,5 milliampere.

VIKTIGT

- Batterierna kan innebära en risk för elektrisk stöt eller brännskada från kortsluten starkström. lakttag lämpliga försiktighetsåtgärder. Service ska utföras av utbildad servicepersonal med kunskap om batterierna och nödvändiga försiktighetsåtgärder. Håll ej behörig personal borta från batterierna.
- Batterierna måste avyttras enligt anvisningarna i lokal lagstiftning.
- Använda batterier får aldrig brännas upp. De kan explodera.
- Byt ut batterierna mot samma antal och typer av batterier som ursprungligen installerats i UPS-enheten.

Chapter 3 Installation

This section explains:

- Equipment inspection
- UPS internal battery connection
- UPS setup and installation, including Extended Battery Modules (EBMs)
- Remote power-off (RPO) installation
- UPS rear panels

Inspecting the Equipment

If any equipment has been damaged during shipment, keep the shipping cartons and packing materials for the carrier or place of purchase and file a claim for shipping damage. If you discover damage after acceptance, file a claim for concealed damage.

To file a claim for shipping damage or concealed damage: 1) File with the carrier within 15 days of receipt of the equipment; 2) Send a copy of the damage claim within 15 days to your service representative.

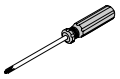
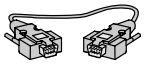
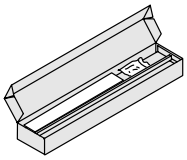
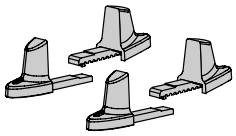
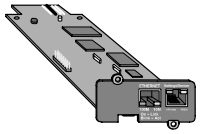
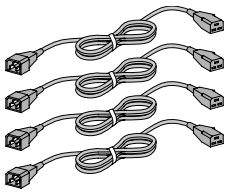
NOTE *Check the battery recharge date on the shipping carton label. If the date has expired and the batteries were never recharged, do not use the UPS. Contact your service representative.*

Checking the Accessory Kit

NOTE *Packaging must be destroyed according to waste management standards. Recycling icons are displayed for easy selection.*

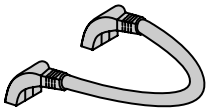
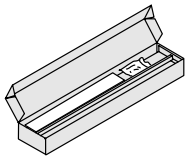
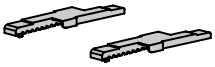
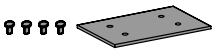
Verify that the following additional items are included with the UPS:

Table 1. UPS Accessory Kit

Item	Description
	UPS user's guide or CD
	Screwdriver
	RS-232 serial cable
	Rackmounting kit for 19-inch (48 cm) bays
	Two sets of pedestals with screws for tower position
	Optional. Network Management Card
	EU models only. Four cord-retention brackets
	EU models only. Four, 10A equipment power cords

If you ordered an optional EBM, verify that the following items are included with the EBM:

Table 2. EBM Accessory Items

Item	Description
	EBM user's guide
	EBM cable
	EBM communication cable
	Rackmounting kit for 19-inch (48 cm) bays
	Pedestal extenders for tower position
	Joining bracket and screws for tower position

Connecting the UPS Internal Battery

To ensure proper battery operation:

1. Verify that the UPS is off and unplugged.
2. Remove the two screws from the battery switch (see Figure 2).

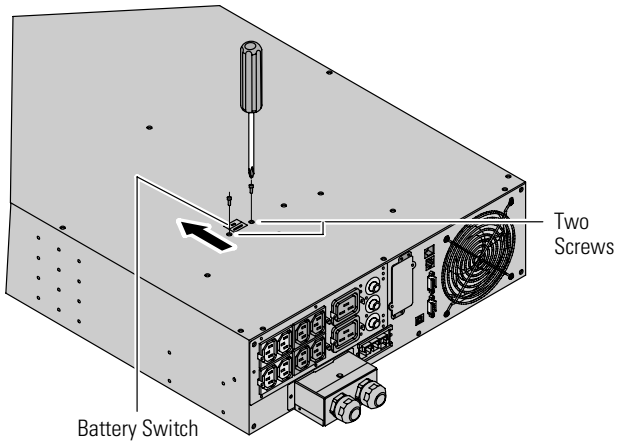


Figure 2. Removing the Battery Switch Screws

3. Slide the battery connector so that you can read **Connected** (see Figure 3).
4. Reinstall the two screws removed in Step 2.
5. Continue to the following section, "UPS Setup."

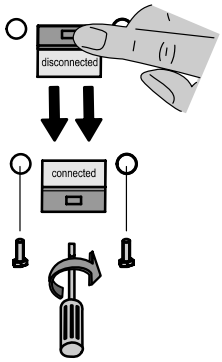


Figure 3. Connecting the Internal Battery Connector

UPS Setup

The Powerware 9135 UPS is designed for flexible configurations and can be installed in a rack or as a standalone cabinet.

If you are installing the UPS in a rack, continue to the following section, "Rackmount Setup;" otherwise, continue to "Tower Setup" on page 30.

Rackmount Setup

The rail kit can be mounted in 19-inch panel (48 cm) racks from 24 to 30 inches (61 to 76 cm) deep and includes:

- Left and right sliding rail assemblies
- (20) M4 × 6 mm Phillips® flat-head screws
- (4) M4 × 10 mm Phillips round-head screws
- (4) M6 × 12 mm Phillips round-head screws
- (8) M6 × 12 mm Phillips flat-head screws
- (2) mounting brackets
- (2) rear hold-down brackets

Installing the Rail Kit

CAUTION

- DO NOT install the UPS or EBM in a hermetically-closed environment without any exchange of air.
- The UPS and EBM are heavy (see page 65): 1) Eaton strongly recommends to remove the battery tray from the UPS before lifting. 2) A minimum of two people are required to lift the cabinets into the rack.

NOTE *The rails and the necessary mounting hardware are supplied by Eaton.*

To install the rail kit:

1. Adjust the UPS control panel orientation by slightly pulling out the control panel and rotating it 90° counterclockwise (see Figure 4).

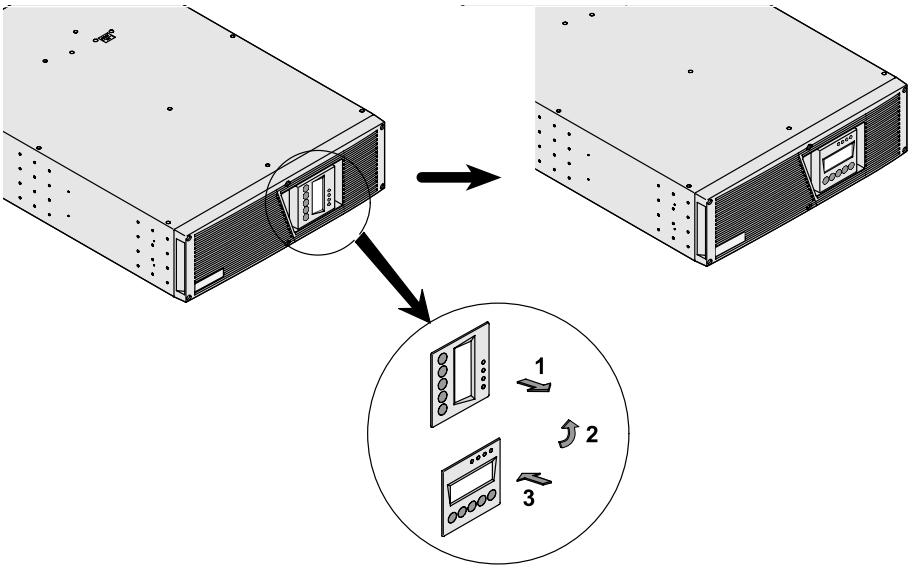


Figure 4. Adjusting the UPS Control Panel Orientation

2. **Recommended.** Remove the UPS battery tray (see Figure 5):

   - Remove the UPS front cover (six screws).

NOTE *A ribbon cable connects the control panel to the UPS. Do not pull on the cable or disconnect it.*

   - Place the front panel above the UPS.
   - Remove the two battery retaining brackets (four screws).
   - Slightly pull the battery tray, then lift it to extract it.

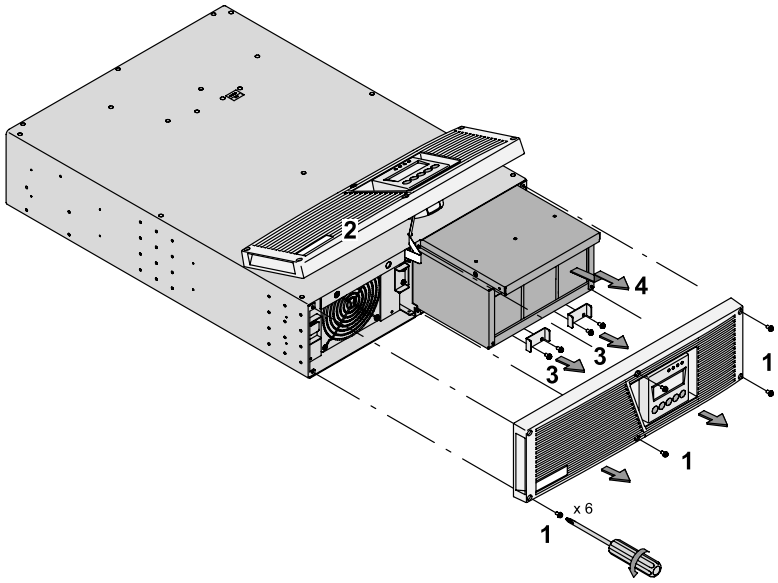


Figure 5. Removing the Battery Tray

3. Place the Powerware cabinet on a flat, stable surface with the front of the cabinet facing you.

NOTE *You can adjust the position of the mounting brackets.*

4. Align the mounting brackets with the screw holes on the side of the cabinet and secure with the supplied M4 × 6 mm flat-head screws.

5. If installing additional cabinets, repeat Steps 3 and 4 for each cabinet.

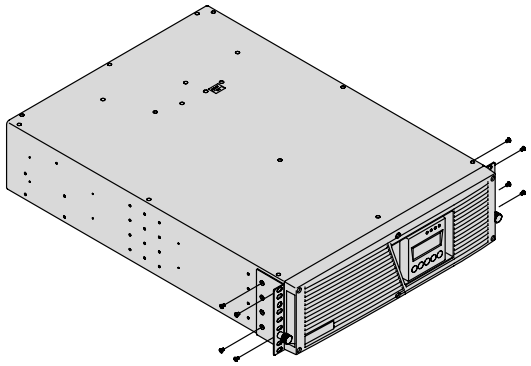


Figure 6. Installing the Mounting Brackets

6. Loosen the assembly wing nuts on both rail assemblies and adjust the rail size for the depth of your rack (see Figure 7).

7. Select the proper holes in the rail for positioning the UPS in the desired location in the rack.

8. Using two M6 × 12 mm flat-head screws, attach the rail to the rear of the rack.

9. Secure the rail to the front of the rack with two M6 × 12 mm screws.

10. Repeat Steps 8 and 9 for the other rail.

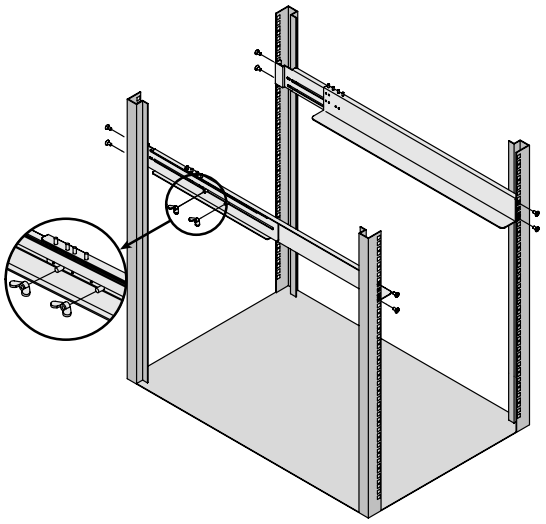


Figure 7. Installing the Rails

11. **Optional.** Install the rear hold-down brackets (included with the rail kit) if you need to move the rack enclosure with the UPS already rack-mounted inside (see Figure 8).

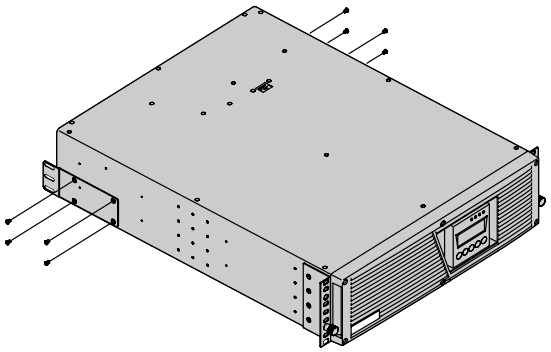


Figure 8. Installing the Rear Hold-Down Brackets

12. Slide the UPS and any optional EBMs into the rack.

13. Secure the front of the cabinet to the rack using two M6 × 12 mm round-head screws on each side (see Figure 9).

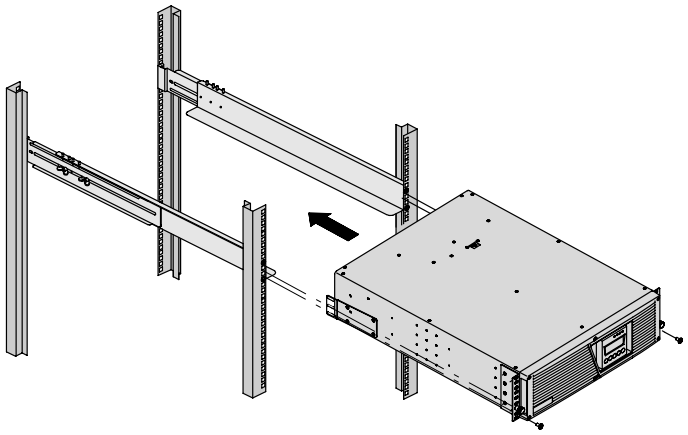


Figure 9. Installing the Cabinets

14. **Optional.** If you installed the rear hold-down brackets, secure the brackets to the rear rails using two screws for each bracket (see Figure 10).

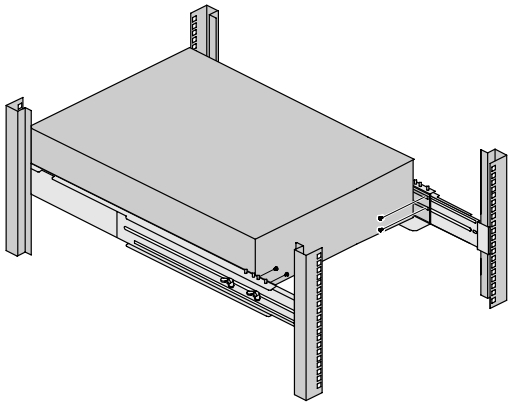


Figure 10. Securing the Rear Hold-Down Brackets

15. If you removed the UPS battery tray in Step 2, replace the battery tray and secure with the battery retaining brackets.

    Replace the UPS front cover.

16. Continue to "Installing the UPS" on page 35.

Tower Setup

CAUTION

- DO NOT install the UPS or EBM in a hermetically-closed environment without any exchange of air.
- The UPS and EBM are heavy (see page 65). A minimum of two people are required to lift the cabinets into the pedestals.

The setup varies depending on the number of cabinets you are installing:

1. Assemble the UPS pedestals (see Figure 11).

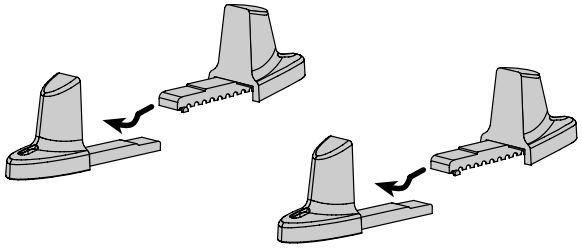


Figure 11. Assembling the UPS Pedestals

2. **For one cabinet,** the pedestals must be installed. Continue to Step 3.

   For two or more cabinets, the pedestal extenders and the joining brackets must be installed. Proceed to Step 6.

NOTE *Always keep 150 mm free space behind the UPS rear panel. The distance between the tower stands should be 450 mm.*

3. Carefully position the cabinet upright with the UPS indicators at the top and place in the pedestals (see Figure 12).

4. Adjust the pedestals to the size of the UPS and secure the pedestals with the captive screws.

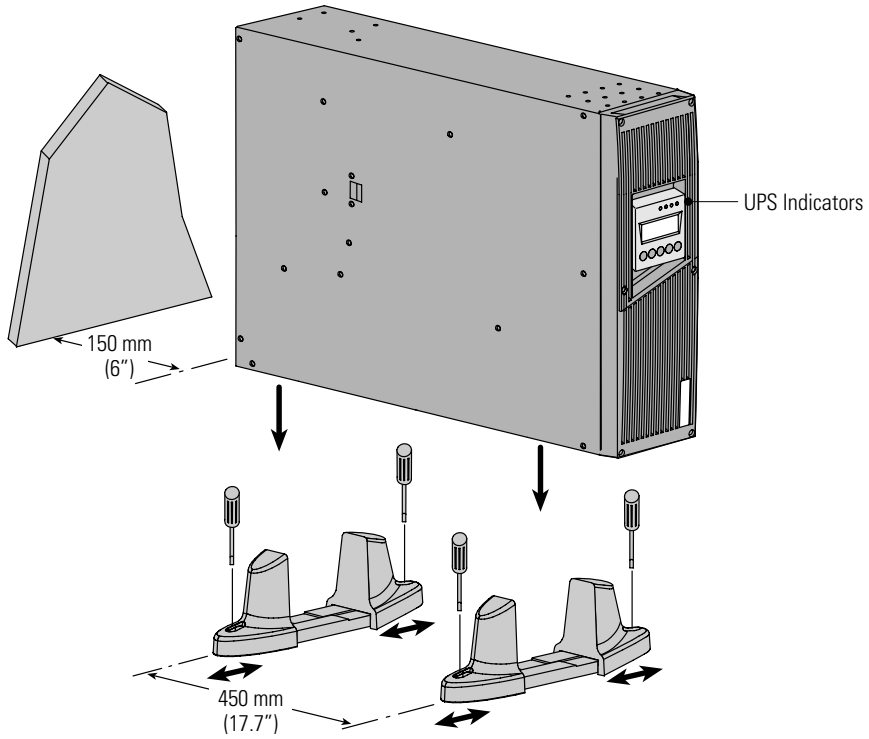


Figure 12. Tower Position with One Cabinet

5. Continue to the following section, "Installing the UPS."

6. Install pedestal extenders for each additional cabinet:

For two cabinets, insert the extender into position 3 on the pedestal (see Figure 13).

For three cabinets or more, insert the extender into position 4 on the pedestal (see Figure 14).

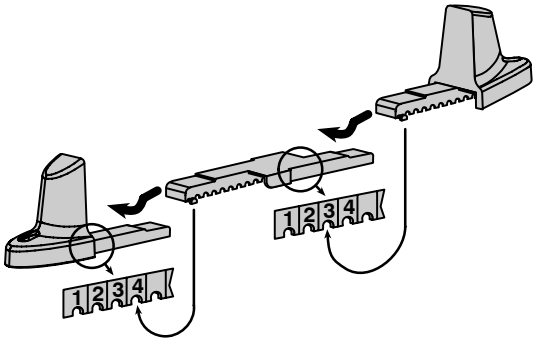


Figure 13. Extending the Pedestals for Two Cabinets

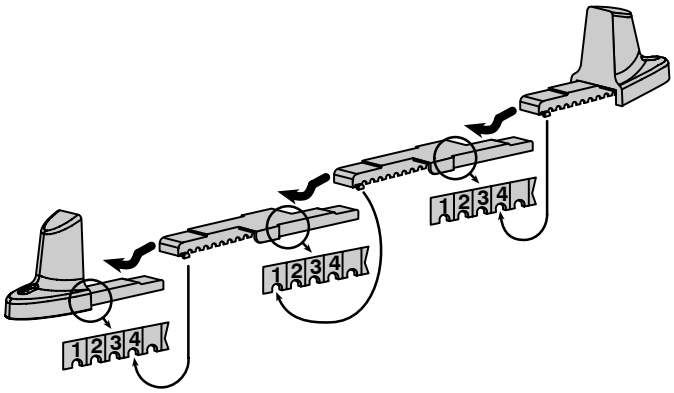


Figure 14. Extending the Pedestals for Three or More Cabinets

7. Carefully position the cabinet upright with the UPS indicators at the top and place in the pedestals (see Figure 15).

8. Adjust the pedestals to the size of the UPS and secure the pedestals with the captive screws.

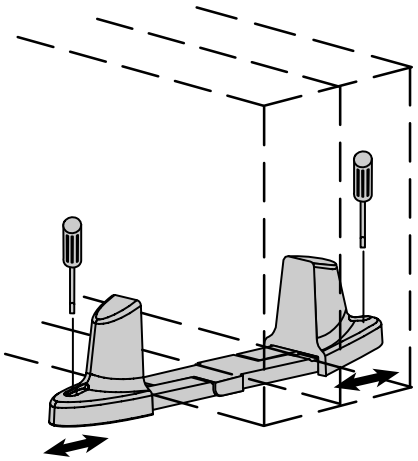


Figure 15. Tower Position with Two Cabinets

9. Align each joining bracket with the adjacent cabinet screw holes and secure with the supplied screws (see Figure 16).

NOTE *Joining brackets are required for installations with two or more cabinets.*

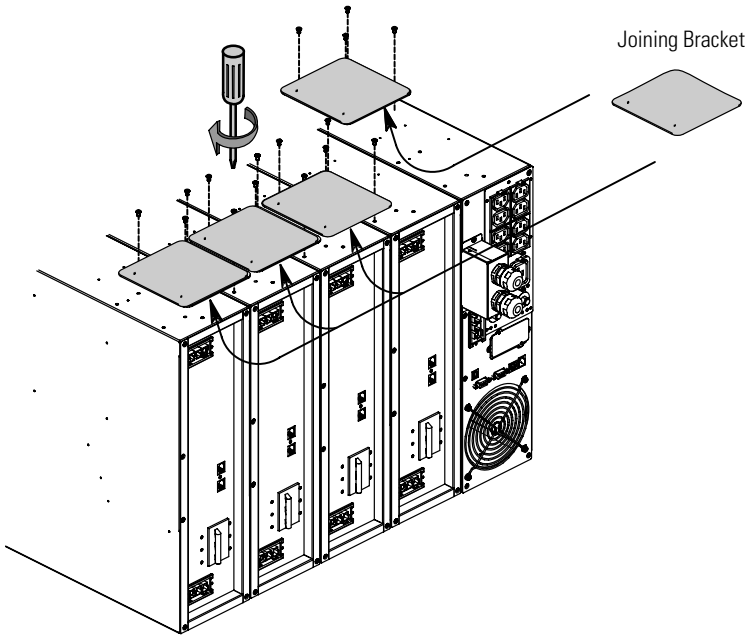


Figure 16. Installing the Joining Brackets

10. If installing additional EBMs, repeat Step 6 for each cabinet.

11. Continue to the following section, "Installing the UPS."

Installing the UPS

NOTE *Do not make unauthorized changes to the UPS or accessories; otherwise, damage may occur to your equipment and void your warranty.*

See "UPS Rear Panels" on page 44 for the rear panel of each model.

To install the UPS and optional EBMs:

1. If installing an optional EBM, continue to Step 2; otherwise, continue to Step 4.
2. Verify that the EBM battery circuit breaker is OFF.
3. Plug the EBM cable into the battery connector. Plug the EBM communication cable into the RJ-11 port. See Figure 17.

   Up to four EBMs may be connected to the UPS.

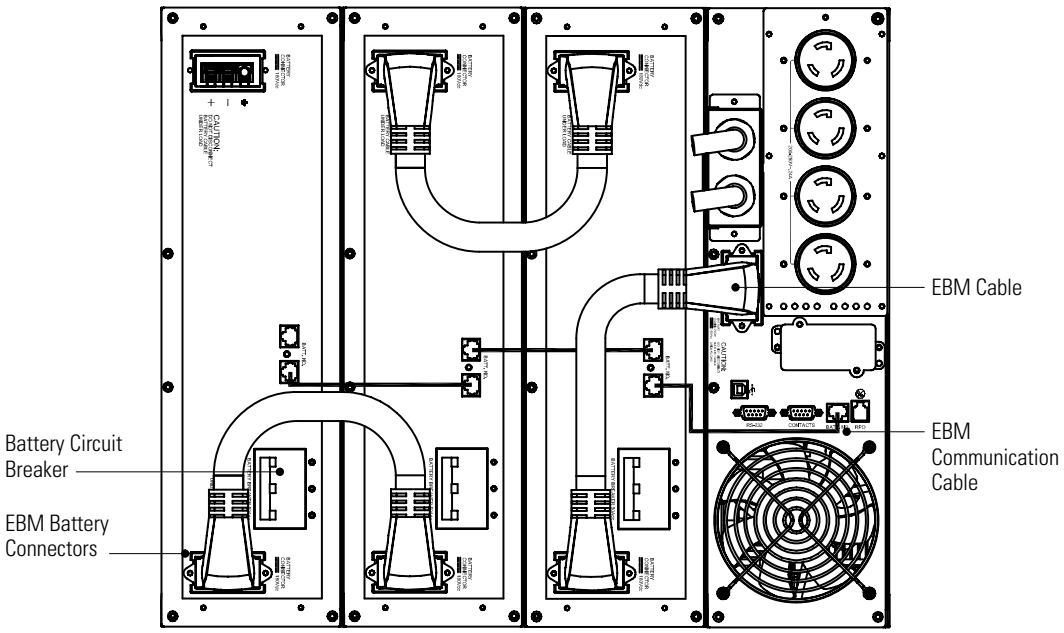


Figure 17. UPS Installation with Three EBMs

4. If you plan to install power management software, connect your computer to the USB port or RS-232 communication port. For RS-232, use only the serial cable supplied in the accessory kit. For more information about communication options, see page 57.

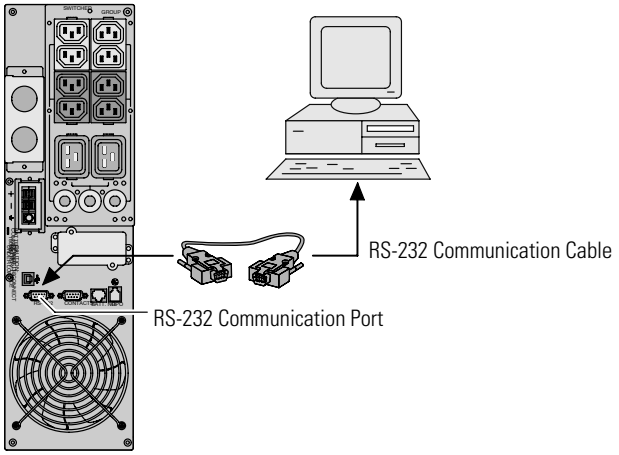


Figure 18. Installing the RS-232 Serial Cable

5. If you are installing a remote power-off (RPO) switch, see the following section, "RPO Installation," to install the switch before powering on the UPS.

6. Continue to "UPS Electrical Connections" on page 38.

RPO Installation

Installation of the RPO function must be carried out in compliance with applicable regulations. The cable is not included.

In order to fully de-energize devices and the Powerware 9135 with the RPO port, it is necessary to:

- Use a two-position switch (normally-open or normally-closed contact and held more than one second).
- Connect this RPO switch to a device that trips all breaker(s) located upstream(1) and downstream(2) the Powerware 9135 UPS. This can be achieved by means of a shunt trip:
  - (1) If not, the output devices could be powered again through static switch when the two-position switch is released.
  - (2) If not, the output devices will remain powered several seconds after the RPO activation.

NOTE *The internal batteries will remain connected to the power module after RPO activation.*

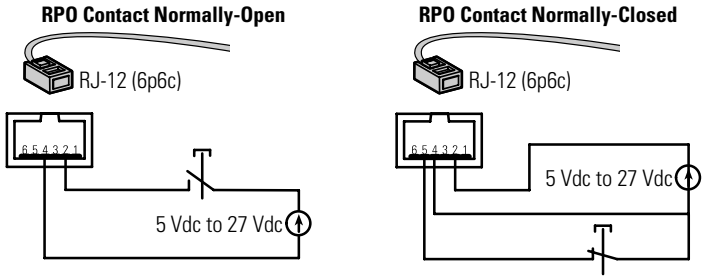


Figure 19. RPO Communication Port

- Signal:
  - **Activation voltage:** 5 Vdc to 27 Vdc
  - **Current:** 10 mA maximum

UPS Electrical Connections

WARNING

Only qualified service personnel (such as a licensed electrician) shall perform the electrical installation. Risk of electrical shock.

CAUTION

- For UPS models with hardwired outputs, overcurrent protection for the output AC circuit(s) is to be provided by others.
- For UPS models with hardwired outputs, suitably rated disconnect switches for the output AC circuit(s) are to be provided by others.

Recommended Upstream Protection

The indicated protection ensures discrimination for each output circuit downstream of the UPS.

If these recommendations are not followed, protection discrimination is not achieved and may result in a potential power interruption to the connected devices.

UPS Power Rating	Upstream Circuit Breaker	
	EU Models	U Models
5000 VA	D curve - 32A	D curve - 35A
6000 VA		

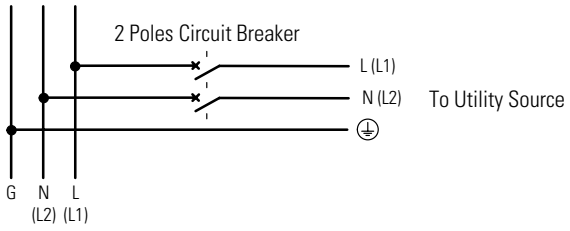


Figure 20. Recommended Upstream Protection

Recommended Downstream Protection (EU Models Only)

The indicated protection ensures discrimination for each output circuit downstream of the UPS.

If these recommendations are not followed, protection discrimination is not achieved and may result in a potential power interruption to the connected devices.

UPS Power Rating	Downstream Circuit Breaker EU Models Only
5000 VA	Z curve - 10A
	C curve - 4A
6000 VA	Z curve - 10A
	C curve - 6A

Required Cable Cross-Sections

Function	Wiring	
	EU Models	U Models
Terminal block cable capacity	6 mm^2, solid or stranded wire (maximum 8 mm^2 or 8 AWG).	6 mm^2, solid or stranded wire (maximum 8 mm^2 or 10 AWG).
Capacity for ground/ earthing conductor		

Continue to the following section, "Connecting the Power Cables (EU Models)," or to "Connecting the Power Cables (U Models)" on page 42.

Connecting the Power Cables (EU Models)

WARNING

- Only qualified service personnel (such as a licensed electrician) shall perform the electrical connection. Risk of electrical shock.
- Before carrying out any connection, check that the battery circuit breaker and upstream protection device (utility input) are OFF (O).
- Use included insulated ferrules with stranded wires.

1. Remove the terminal block cover (two screws) with the supplied screwdriver (see Figure 21).

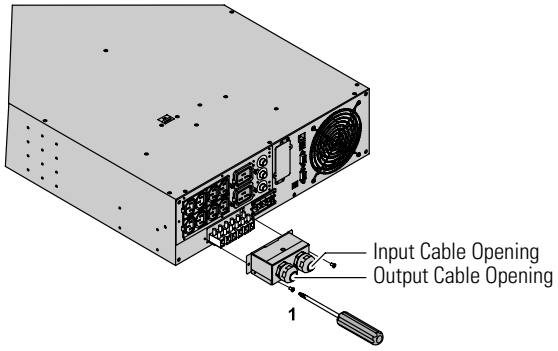


Figure 21. Removing the Terminal Block (EU Models)

2. Insert the input cable through the input cable opening (see Figure 22).
3. Connect the three wires to the input terminal block.

CAUTION

Always connect the ground/earthing wire first.

4. Insert the output cable through the output cable opening.
5. Connect the three wires to the output terminal block.

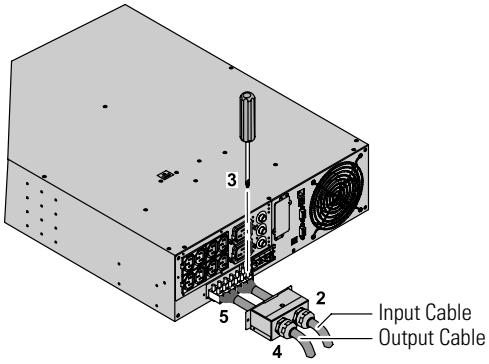


Figure 22. Installing the Input and Output Cables (EU Models)

6. Replace the terminal block cover and tighten the cables.
7. Secure the terminal block cover with the two screws removed in Step 1.
8. Plug the equipment to be protected into the appropriate UPS output receptacles using the supplied cables (see page 61 for more information on load segments). See Figure 23.

   Connect any high-power devices to the 16A outlet.
9. Install the cord-retention brackets to secure the cords and provide strain relief.

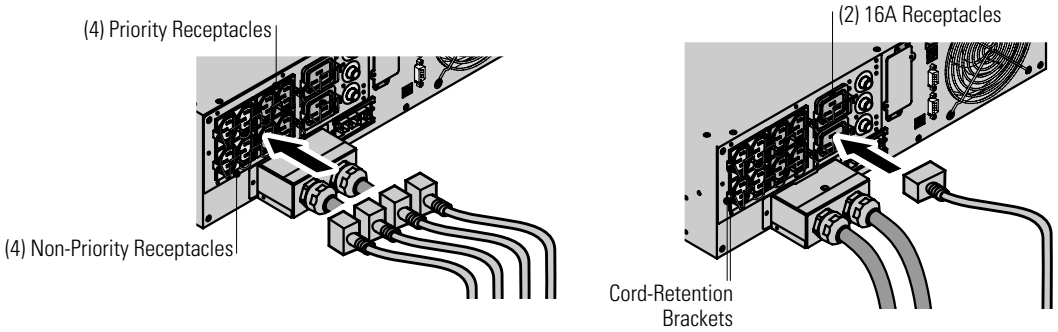


Figure 23. Connecting the Power Cords (EU Models)

Connecting the Power Cables (U Models)

WARNING

- Only qualified service personnel (such as a licensed electrician) shall perform the electrical connection. Risk of electrical shock.
- Before carrying out any connection, check that the battery circuit breaker and upstream protection device (utility input) are OFF (O).
- Use included insulated ferrules with stranded wires.

1. Remove the terminal block cover (two screws) with the supplied screwdriver (see Figure 21).

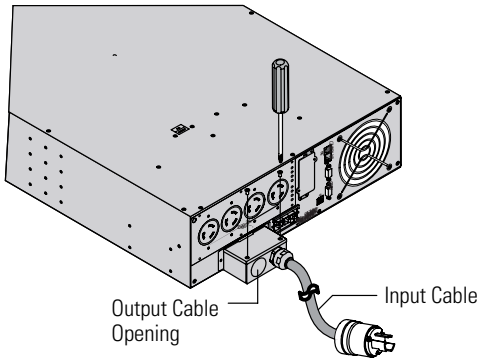


Figure 24. Removing the Terminal Block (U Models)

2. Connect the three wires to the input terminal block.

CAUTION

Always connect the ground/earthing wire first.

3. Insert the output cable through the output cable opening.

4. Connect the three wires to the output terminal block.

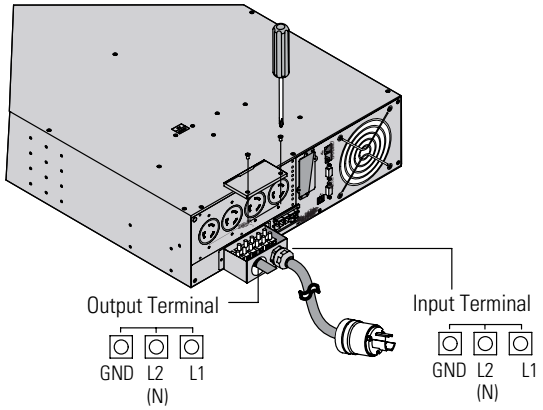


Figure 25. Installing the Input and Output Cables (U Models)

5. Replace the terminal block cover and tighten the cables.
6. Secure the terminal block cover with the two screws removed in Step 1.
7. Plug the equipment to be protected into the appropriate UPS output receptacles.

NOTE *If more than one load is connected to the UPS, the total capacity of the loads should not exceed 30A.*

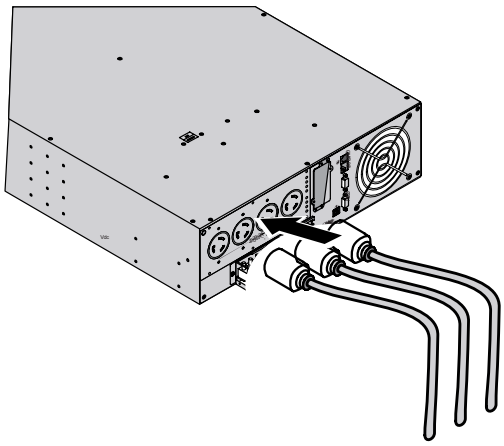


Figure 26. Connecting the Power Cords (U Models)

UPS Rear Panels

This section shows the rear panels of the Powerware 9135 models.

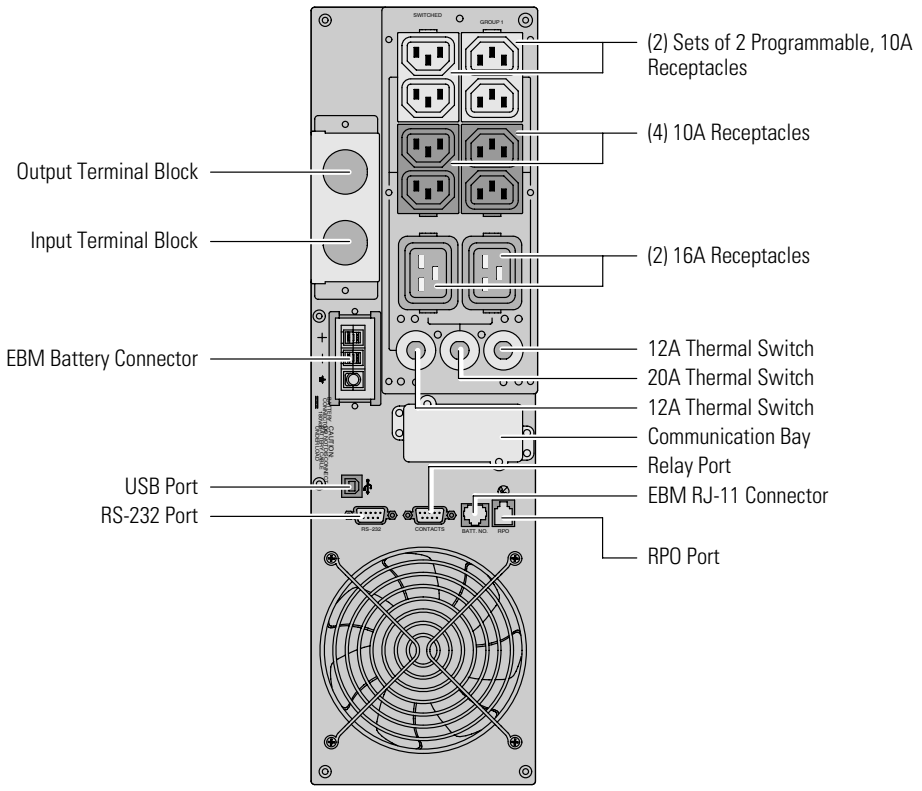


Figure 27. 5000/6000 VA, EU Models

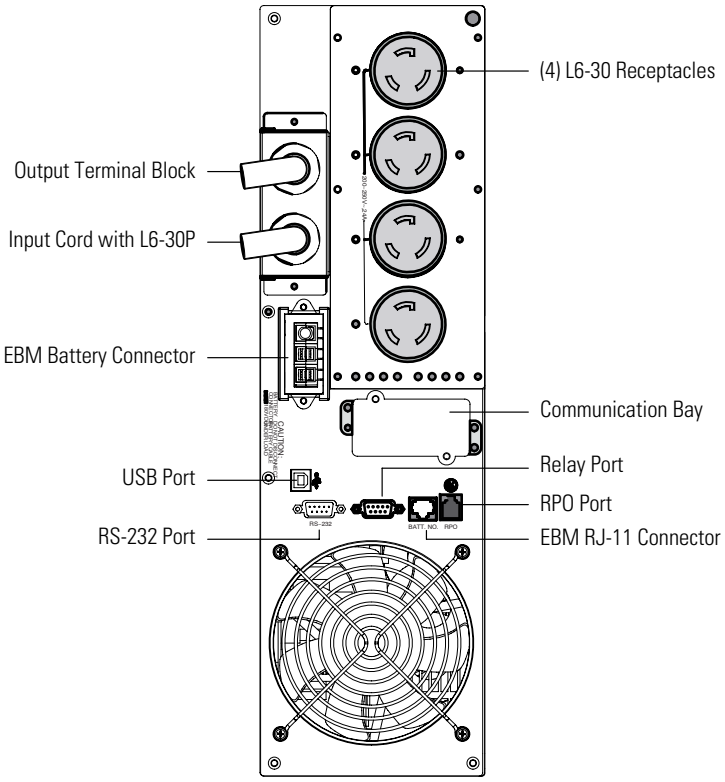


Figure 28. 5000/6000 VA, U Models

Chapter 4 Operation

This section describes:

- The control panel
- Turning the UPS on and off
- Starting the UPS on battery
- Operating modes
- Display functions

Control Panel Functions

The UPS has a four-button graphical LCD with backlight. It provides useful information about the UPS itself, load status, events, measurements, and settings (see Figure 29).

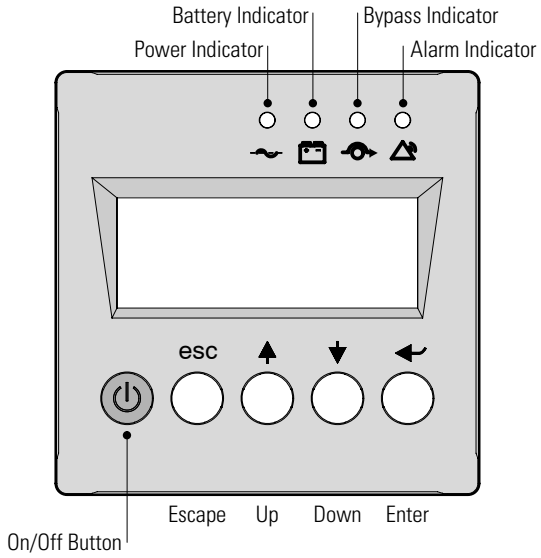


Figure 29. UPS Control Panel

NOTE *The On/Off button controls only the UPS output. The On/Off button has no effect on equipment connected to the UPS.*

Turning the UPS On

To turn the UPS on:

1. Verify that the UPS internal battery connector is connected (see Figure 2 on page 22).
2. Set the upstream circuit breaker (not included) to the ON position.

   The equipment is powered by utility power, but not protected by the UPS.

   Batteries are recharging. An eight-hour recharge period is necessary to get full backup time.

   The ~ and ⊙ indicators illuminate.

   To change the factory-set defaults, see "User Settings " on page 52.
3. Press and hold the ⏻ button until you hear the UPS beep (approximately three seconds).

   After the UPS is turned on, it conducts a self-test and enters Normal mode. The ~ indicator remains on and the ⊙ indicator turns off indicating that power is available to your equipment.

   If the alarm beeps or a UPS alarm indicator stays on, see "Troubleshooting" on page 67.

Starting the UPS on Battery

NOTE *Before using this feature, the UPS ON/OFF settings must have been enabled (see Table 5 on page 53).*

To turn on the UPS without using utility power, press and hold the ⏻ button for three seconds. The UPS starts up in Battery mode and supplies battery power to your equipment.

Turning the UPS Off

To shut down the UPS:

1. Press the ⏻ button for approximately three seconds

   The UPS beeps once, and the load is no longer protected by the UPS. It is powered by utility power. If the UPS is set in frequency converter mode, the equipment will not be powered.

   If the utility power is out of tolerance, the UPS will generate a 10 ms output calibrated break.

2. For a full shutdown of UPS and connected load, the upstream circuit breaker (not included) should be set to the OFF position.

Operating Modes

The Powerware 9135 front panel indicates the UPS status through the UPS indicators. Figure 30 shows the UPS front panel indicators and controls.

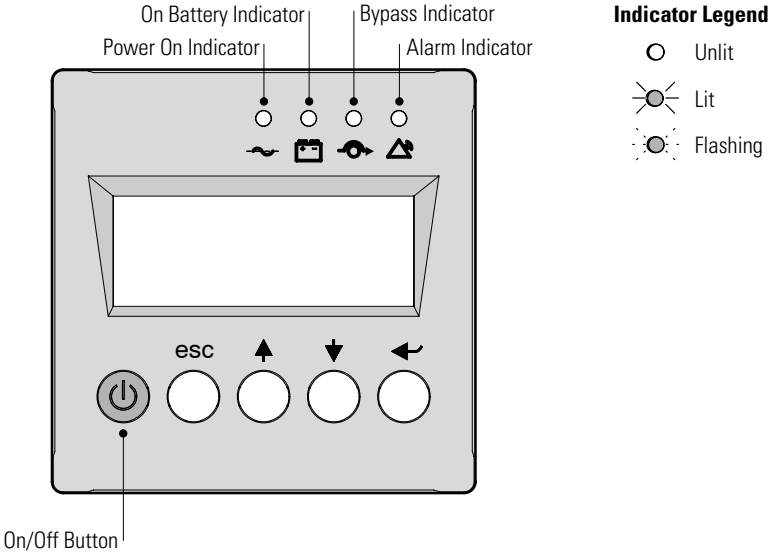


Figure 30. UPS Front Panel

Normal Mode

During Normal mode, the ~ indicator illuminates. The UPS monitors and charges the batteries as needed and provides power protection to your equipment.

Eco Mode

During Eco mode, the ~ indicator illuminates. Eco mode reduces the consumption of electrical power.

Under normal conditions (utility power available), the equipment is supplied in ECO mode.

NOTE *ECO mode: operating mode by which the equipment is supplied directly by the utility power if it is within the tolerances defined by the user.*

If utility power is out of tolerance, the ~ indicator flashes and the ⚠ indicator illuminates. The equipment is protected by the UPS.

Battery Mode

When the UPS is operating during a power outage, the alarm beeps once every five seconds and the ~ and 🔋 indicators illuminate. The equipment is protected by the UPS and supplied by the battery. The display shows the remaining battery backup time.

If battery capacity becomes low while in Battery mode, the alarm beeps every five seconds. Immediately complete and save your work to prevent data loss and similar difficulties.

When the utility power returns, the UPS transfers to Normal mode operation while the battery recharges.

End of backup time: all indicators turn off. The alarm beeps continuously and the UPS displays `End of backup time Battery low.`

When utility power is restored after the UPS shuts down, the UPS automatically restarts.

Bypass Mode

The UPS transfers to Bypass mode when:

- The utility power is out of tolerence
- There is an overload condition
- The ⏻ button is pressed
- There is a malfunction

The ~ and ⊙ indicators illuminate and the equipment is powered by utility power.

Display Functions

Figure 31 shows the basic menu structure.

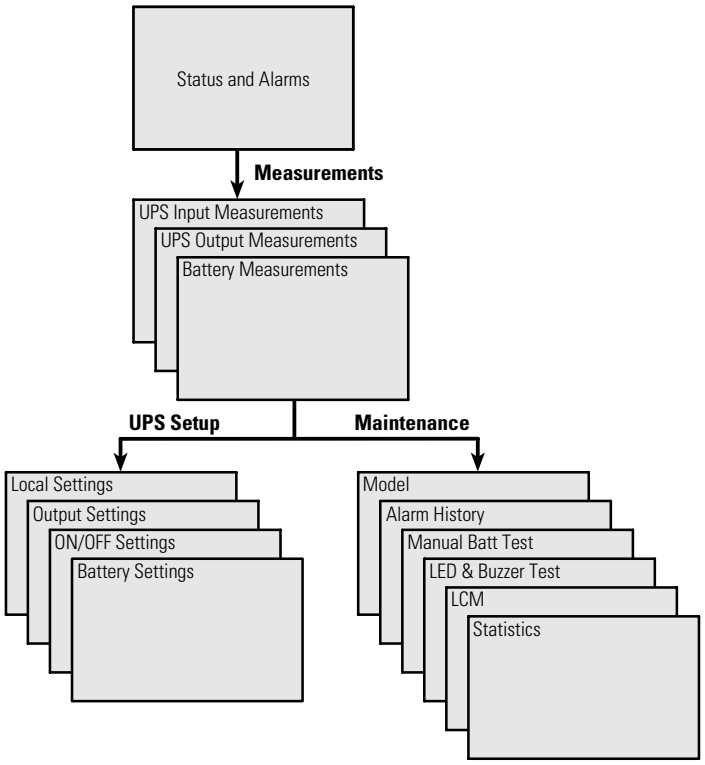


Figure 31. Menu Map for Display Functions

Access to Measurements

Press the ▼ button on the UPS front panel to access measurements for voltage, current, frequency, power output, and battery capacity.

Access to UPS Setup

To access the UPS Setup menu:

1. Scroll to the UPS Setup menu by pressing the ▲ button.
2. Press the ↵ button to get access.

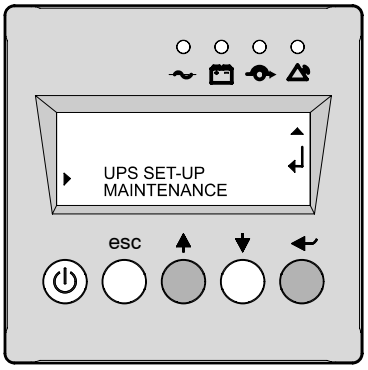


Figure 32. Access to UPS Setup

The following tables display the options that can be changed by the user.

Table 3. Local Settings

Function	Factory Setting	Options
Language	English	French, German, Italian, Portuguese, Spanish
Date / Time Format	International (DD-MM-YYYY/HH :MM)	US (MM-DD-YYYY/HH:MM AM/PM)
Date / Time Change	GMT + 1 (Continental Europe)	MM-DD-YYYY/HH :MM adjustable
Audible Alarm	Yes	No

Table 4. Output Settings

Function	Factory Setting	Options	Comments
Output Voltage	EU Models: 230V U Models: 208V	200V / 208V / 220V / 240V / 250V	
Freq Converter	Disable	Enable	
Output Frequency	EU Models: 50 Hz U Models: 60 Hz	60 Hz	User selectable under frequency-converter mode
Eco Mode	Disable	Enable	See page 50
Slew Rate	1 Hz / sec	0.5 Hz / sec	
Bypass Transfer If bypass Ac nok?	Yes	No	Transfer to bypass if utility power is out of tolerance
Interrupt Time	10 ms	20 ms, ... , 200 ms	Break time calibration during load transfer on utility power out of tolerance
Overload Prealarm	105%	40%, 50%, 70%	Alarm if threshold is overrun

Table 5. ON/OFF Settings

Function	Factory Setting	Options	Comments
Cold Start	Disable	Enable	Start on battery
Forced Reboot	Enable		Enables automatic restart of the system even if utility power is restored before the end of the shutdown sequence
Auto Restart	Enable	Disable	UPS restarts automatically when utility power is restored
Energy Saving	Disable	Enable	Automatic shutdown on battery if output load level <10%
Sleep Mode	Enable	Disable	
Remote Command	Enable	Disable	Enables consideration of shutdown or restart orders from software to be authorized

Table 6. Battery Settings

Function	Factory Setting	Options	Comments
Auto Battery Test	Everyweek	No test / everyday / everyweek /everymonth	
Low Batt Warning	20%	0 to 100%	1% increment
User Batt Settings	UPS reads number of battery modules connected	From 0 to 95 Ah	5 Ah increment
Deep Disch Protect	Yes	No	Protection against deep discharge. If disabled, the Eaton warranty will be void.

Access to Maintenance

To access the Maintenance menu:

1. Scroll to the Maintenance menu by pressing the ▲ button.
2. Press the ↵ button to get access.

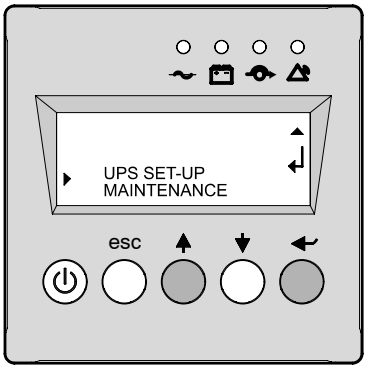


Figure 33. Access to Maintenance

The following table displays the maintenance options.

Table 7. Maintenance Settings

Function	Sub-Function	Option/Display	Comments
Model	Power Module	SN: xxxxxxxxx SOFT: xxx	Serial number Soft version
	Frame		
Alarm History	Read	Description Date Hour Alarm xxx	10 alarms can be stored automatically
	Erase	No / Yes	
Manual Batt Test	Manual Battery Test	No / Yes	
Led & Buzzer Test	Led & Buzzer Test	No / Yes	
Life Cycle Monitoring	LCM	Enable / Disable	Life cycling monitoring alarms
Statistics	Auto Statistics	Statistics	
	Custom Statistics	Reset Date ? Are you sure ?	

Life Cycle Monitoring

LCM displays messages on the UPS front panel and through the communication channels, at every important stage of the UPS's life. Press the ↵ button to display LCM warning details.

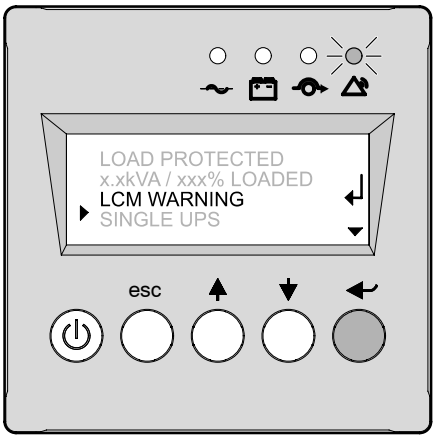


Figure 34. LCM Warning Screen

Anticipate Maintenance

Automatic warnings appear when maintenance actions need to be planned:

Table 8. LCM Warning Details

LCM Warning Details	Signification
BATTERY CHECK RECOMMENDED	Battery is approaching its reliability end of life. Risk to reduce dramatically backup time.

Reset or Disable LCM

In case of any LCM messages displayed:

- For temporary reset: press the esc button for at least three seconds while in the Status and Alarm menu to temporarily cancel the alarm status.

  The alert will be repeated twice every 30 days.

- For permanent reset: press the ↵ button for at least three seconds while in the LCM warning menu to permanently cancel the LCM event.

At any time:

- To disable all LCM messages, select `disable all` while in the LCM menu.

  Be careful: if you disable all LCM messages, you will not be aware of any LCM events that can happen on the UPS.

Chapter 5 Additional UPS Features

This section describes:

- Communication ports
- Network Management Card
- Load segments (PowerShare)

Communication Ports

The Powerware 9135 provides three communication methods that can be used simultaneously:

- RS-232 or USB communication. Compatible with most power management software applications. Note that both ports cannot be used at the same time.
- The relay port uses output contacts for basic signaling or for protection of IT systems like IBM® iSeries® (formerly AS/400®) and more.
- The communication bay is compatible with the optional Network Management Card.

USB Port

The UPS can communicate with a USB-compliant computer using Powerware LanSafe® Power Management Software or other HID-compliant power management software compatible with Microsoft® Windows® 2000 and XP operating systems that support HID devices.

NOTE *The latest versions of the Powerware LanSafe Power Management Software and the USB firmware are available at www.powerware.com.*

To establish communication between the UPS and a computer:

1. The USB port is hot-pluggable. Connect the USB cable to the USB port on the UPS rear panel (see Figure 35).

   Connect the other end of the USB cable to the USB port on your computer.

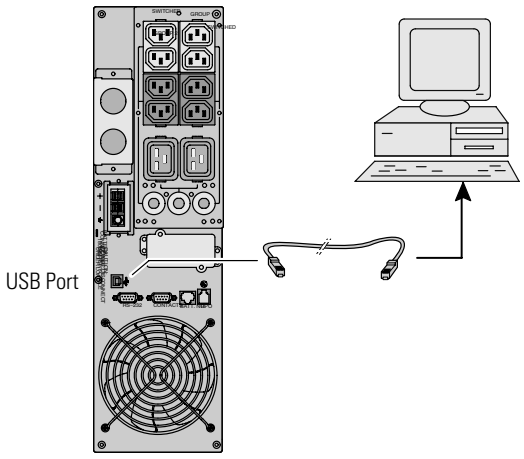


Figure 35. The USB Port

2. Install the Powerware LanSafe Power Management Software and USB drivers according to the instructions provided at www.powerware.com.

Relay Port

When the status is active, the contact between the common (Pin 5) and the relevant information pin is closed.

Output relays specifications:

- **Voltage:** 48 Vdc maximum
- **Current:** 2A maximum
- **Power:** 62.5 VA, 30W

Example: for 48 Vdc, Imax=625 mA

Figure 36 identifies the cable pins and Table 9 describes the pin functions.

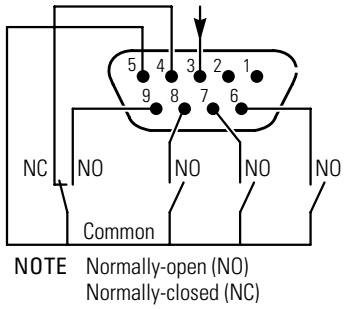


Figure 36. Communication Port

Table 9. Communication Port Pin Assignment

Pin Number	Function
1, 2	Not used
3	Remote Power-off signal (5–27 Vdc, 10 mA max)
4	Operation on mains (not on battery)
5	User common
6	Operation on automatic bypass
7	Low Battery
8	Load protected
9	Operation on battery

Network Management Card (Optional)

It is not necessary to shut down the UPS before installing a communication card.

1. Remove the slot cover secured by two screws.
2. Insert the communication card into the slot.
3. Secure the card with both screws.

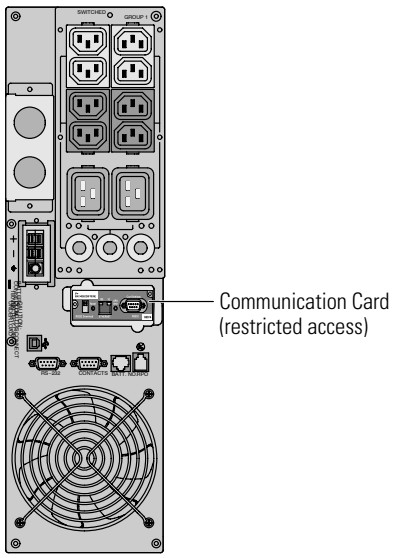


Figure 37. Network Management Card (EU Model Shown)

EU Model Load Segments (PowerShare)

Each EU model UPS has programmable outlets as shown in Figure 38. During a power outage, you can keep key pieces of equipment running while you turn off other equipment. It is preferable to connect the non-priority loads to the programmable receptacles, ⏦₁ and ⏦₂. This feature allows you to save battery power. See your power management software manual for details (refer to www.powerware.com for the latest information).

NOTE *If power management software is not used, the individual load segments cannot be controlled.*

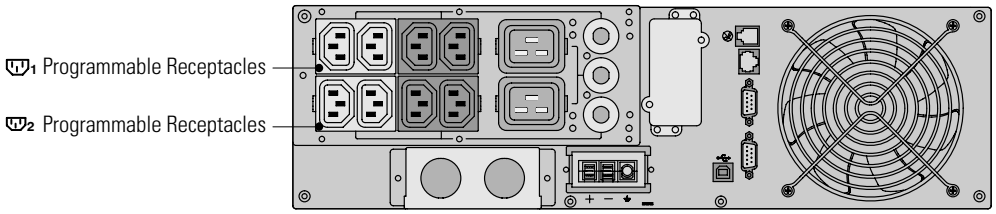


Figure 38. Load Segments (EU Models Only)

Chapter 6 Maintenance

This section describes replacing the power module and battery tray.

Hot-Swapping the Power Module

WARNING

Only qualified service personnel (such as a licensed electrician) shall perform the electrical installation. Risk of electrical shock.

This operation can be performed without interrupting the equipment.

1. Remove the UPS front cover (six screws). See Figure 39.

NOTE *A ribbon cable connects the control panel to the UPS. Do not pull on the cable or disconnect it.*

2. Place the front panel above the UPS.
3. Remove the two power module brackets (four screws).
4. Slightly pull the power module, then lift it to extract it.

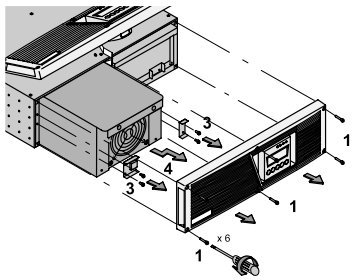


Figure 39. Removing the Power Module

5. Replace the faulty power module with one of the same power rating (5000 VA or 6000 VA) and secure with the power module brackets.
6. Replace the UPS front cover.

Hot-Swapping the Battery Tray

CAUTION

- Batteries can present a risk of electrical shock or burn from high short-circuit current. Observe proper precautions. Servicing should be performed by qualified service personnel knowledgeable of batteries and required precautions. Keep unauthorized personnel away from batteries.
- Remove watches, rings, bracelets and all other metal objects from the hands and arms.
- Use tools with an insulated handle.
- When replacing batteries, replace with the same number of the BB/HR5.5-12 batteries.

This operation can be performed without interrupting the equipment.

1. Remove the UPS front cover (six screws). See Figure 40.

NOTE *A ribbon cable connects the control panel to the UPS. Do not pull on the cable or disconnect it.*

2. Place the front panel above the UPS.
3. Remove the two battery retaining brackets (four screws).
4. Slightly pull the battery tray, then lift it to extract it.

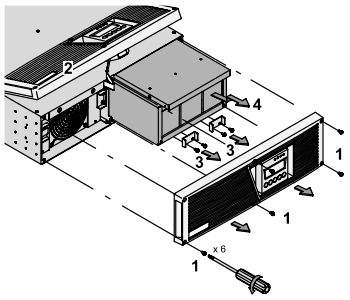


Figure 40. Removing the Battery Tray

5. Replace the battery tray and secure with the battery retaining brackets.

NOTE *To ensure safety and high performance, use only batteries supplied by Eaton.*

6. Replace the UPS front cover.

Chapter 7 Specifications

Table 10. Input and Output Specifications

Model Number	Power Levels (Rated at Nominal Inputs)	AC Input			Output on Battery Power	
		Nominal Voltage	Voltage Range[1]	Frequency Range[2]	Voltage[3]	Frequency
PW9135G5000-XL3UHW PW9135G5000-XL3U	5000 VA, 3500W	208V	156–280V	40–70 Hz (± 0.2 Hz)	208V	60 Hz
PW9135G6000-XL3UHW PW9135G6000-XL3U	6000 VA, 4200W					
PW9135G5000-XL3UEU	5000 VA, 3500W	230V	156–280V		230V	50 Hz
PW9135G6000-XL3UEU	6000 VA, 4200W					

[1] The high and low thresholds can be adjusted using the UPS front panel (see page 52).
[2] Up to 40 Hz in low-sensitivity mode (programmable using the UPS front panel (see page 52).
[3] Adjustable to 200V (10% derating of output power) 208/220/230/240/250V.

Table 11. Dimensions and Weights

Model	Dimensions (WxHxD)	Weight
5000 VA UPS	444.5 × 130.6 × 741 mm (17.5″ × 5.1″ × 29.2″)	57 kg (125.7 lb)
6000 VA UPS		
UPS Power Module	198 × 127 × 603 mm (7.8″ × 5″ × 23.7″)	12 kg (26.5 lb)
UPS Internal Battery	214.5 × 116 × 498 mm (8.4″ × 4.6″ × 19.6″)	30.5 kg (67.2 lb)
EBM	444.5 × 130.6 × 650 mm (17.5″ × 5.1″ × 25.6″)	70.5 kg (155.4 lb)

Table 12. Power Connections

Model	Input Connection	Output Receptacles
U Models	10 ft, L6-30P power cord	(4) NEMA L6-30R
EU Models	Hardwired	Hardwired with (8) 10A, IEC 320-C13; (2) 16A, IEC 320-C19

Table 13. Environmental and Safety

	U Models	EU Models
Operating Temperature	0°C to 40°C (32°F to 104°F)	
Storage Temperature	-25°C to 40°C (-13°F to 104°F)	
Relative Humidity	5–95% noncondensing	
Operating Altitude	Up to 1,000 meters above sea level	
Audible Noise	Less than 46 dBA Normal mode, typical load and Battery mode	
Surge Suppression	ANSI C62.41 Category B, IEC 61000-4-5	
Safety Conformance	UL 1778; CSA C22.2, No. 107.1; NOM-019-SCFI	UL 1778; CSA C22.2, No. 107.1; EN 62040-1-1, IEC 60950-1, IEC 50091-1-1
Agency Markings	cUL, NOM	TUV(GS), CE, cUL, C-tick
EMC (Class A)	FCC Part 15	EN 62040-2 C1, AS 62040-2 C1, FCC Part 15

Table 14. Battery

UPS Configuration	(15) 12V, 5.5 Ah internal batteries
EBM Configuration	(2 strings of 15) 12V, 5.5 Ah internal batteries
Type	Sealed, maintenance-free, lead-acid

Table 15. Battery Runtimes

UPS	UPS Internal Batteries	+1 EBM	+2 EBMs	+3 EBMs	+4 EBMs
5000 VA	5 min	22 min	41 min	1 hr 2 min	1 hr 23 min
6000 VA	4 min	17 min	33 min	50 min	1 hr 7 min

NOTE Battery times are approximate and vary depending on the load configuration and battery charge.

Chapter 8 Troubleshooting

This section explains:

- UPS alarms and conditions
- Service and support

Troubleshooting LED

Press the esc button to stop the audible alarm.

NOTE *In case of "MULTIPLE FAULT", press the ↵ button and the ▲ button to get access to further details.*

NOTE *In case of "LCM WARNING", see "Life Cycle Monitoring" on page 55.*

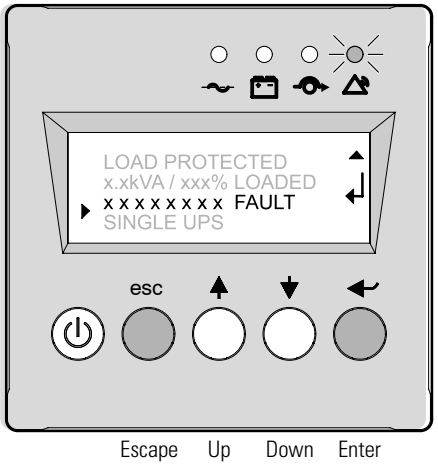


Figure 41. Troubleshooting LED

Troubleshooting Not Requiring Eaton Service

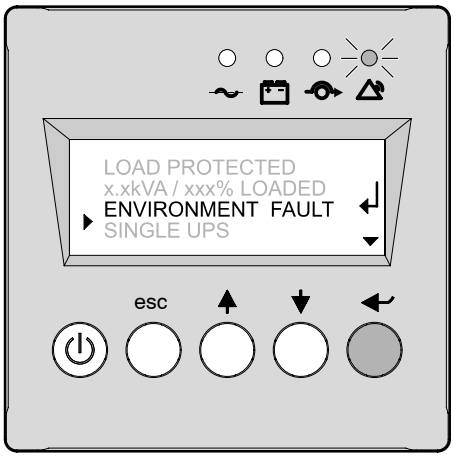


Figure 42. Environment Fault

Press the ↵ button to display the following details:

Displayed Details	Signification	Correction
NO BATTERY	The battery is incorrectly connected.	Check battery connections.
I/O BAD CONNECTION	Utility input is not connected to the correct terminals.	Check AC wiring.
NO POWER MODULE	The power module is not inserted.	Check power module connections (see page 63).
NO BATTERY MODULE	The battery tray is incorrectly connected.	Check battery connections (see page 64).
INV THERM OVERLOAD	The UPS shuts down automatically because of a major overload.	Check the power drawn by the connected devices and disconnect any non-priority devices.
INVERT LIMITATION	Short circuit conditions on output devices.	Check the installation at the UPS output (wiring, fault equipment).

Troubleshooting Requiring Eaton Service

NOTE *In case of multiple fault, press the ↵ button and the ▲ button to get access to further details.*

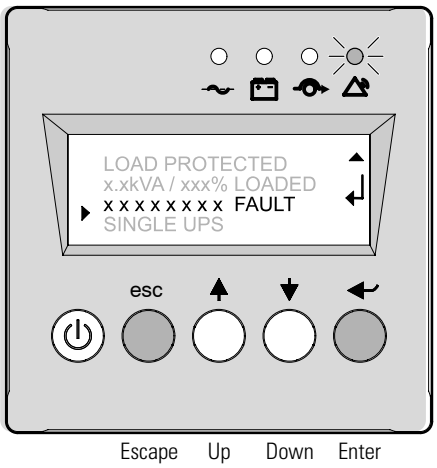


Figure 43. Troubleshooting LED

Display	Signification	Correction
POWER MODULE FAULT	Internal power module fault detected. Use "Enter" button to display details. In Parallel: see the note below to start the other UPS alone.	Call the Help Desk. Replace the power module (see page 63).
BATT MODULE FAULT	Battery fault detected during the battery test. Use "Enter" button to display details.	Call the Help Desk. Replace the battery tray (see page 64).
FRAME FAULT	Internal chassis fault detected. Use "Enter" button to display details.	Call the Help Desk.

Service and Support

If you have any questions or problems with the UPS, call your **Local Distributor** or the **Help Desk** at one of the following telephone numbers and ask for a UPS technical representative.

United States:	1-800-356-5737 or 1-919-870-3149
Canada:	1-800-461-9166 ext 260
All other countries:	Call your local service representative

Please have the following information ready when you call the Help Desk:

- Model number
- Serial number
- Version number (if available)
- Date of failure or problem
- Symptoms of failure or problem
- Customer return address and contact information

If repair is required, you will be given a Returned Material Authorization (RMA) Number. This number must appear on the outside of the package and on the Bill Of Lading (if applicable). Use the original packaging or request packaging from the Help Desk or distributor. Units damaged in shipment as a result of improper packaging are not covered under warranty. A replacement or repair unit will be shipped, freight prepaid for all warrantied units.

NOTE *For critical applications, immediate replacement may be available. Call the* ***Help Desk*** *for the dealer or distributor nearest you.*

Chapter 9 Warranty

Two-Year Limited Warranty (US and Canada)

Powerware UPS Models: 3105, 9120, 9125, 9135, 9140, and FERRUPS® up to 3.1 kVA

WARRANTOR: The warrantor for the limited warranties set forth herein is Eaton Electrical Inc., a Delaware Corporation company ("Company").

LIMITED WARRANTY: This limited warranty (this "Warranty") applies only to the original End-User (the "End-User") of any Powerware 3105, 9120, 9125, 9135, 9140, and FERRUPS up to 3.1 kVA Products (individually and collectively, the "Product") purchased on or after June 1, 2004 and cannot be transferred. This Warranty applies even in the event that the Product is initially sold by Company for resale to an End-User.

LIMITED WARRANTY PERIOD: The period covered by this Warranty for Product installed [and currently located] in the fifty (50) United States, the District of Columbia, and Canada is twenty-four (24) months from the date of purchase.

WHAT THIS LIMITED WARRANTY COVERS: The warrantor warrants that the Product and battery (individually and collectively, the "Warranted Items") are free from defects in material and workmanship. If, in the opinion of Company, a Warranted Item is defective and the defect is within the terms of this Warranty, Company's sole obligation will be to repair or replace such defective Warranted Item (including by providing service, parts and labor, as applicable), at the option of Company.

PROCEDURES FOR REPAIR OR REPLACEMENT OF WARRANTED ITEMS: The Warranted Item will be repaired or replaced at a Company site or such other location as determined by Company.

If the Warranted Item is to be replaced by Company, and the End-User supplies a credit card number or purchase order for the value of the replacement Product, Company will use commercially reasonable business efforts to ship (via standard ground shipment and at no cost to the End-User) the replacement Warranted Item to the End-User within one (1) business day after Company receives notice of the warranty claim. In such case, the End-User must return (at Company's expense) the defective Warranted Item to Company in the same packaging as the replacement Warranted Item received by the End-User or as otherwise instructed by Company. If Company does not receive the defective Warranted Item, Company will either charge the End-User's credit card, or send the End-User an invoice (which the End-User agrees to pay), for the value of the replacement Product.

If the Warranted Item is to be replaced by Company, but the End-User is unwilling or unable to supply a credit card number or purchase order for the value of the replacement Product, Company will use commercially reasonable business efforts to ship (via standard ground shipment and at no cost to the End-User) the replacement Warranted Item to the End-User within one (1) business day after Company receives the defective Product from the End-User.

In any case, Company will provide shipping instructions and will pay its designated carrier for all shipping charges for return of defective equipment and replacement of Warranted Items. Any returned Warranted Item or parts that are replaced may be new or reconditioned. All Warranted Items returned to Company and all parts replaced by Company shall become the property of Company.

WHAT THIS LIMITED WARRANTY DOES NOT COVER: This Warranty does not cover any defects or damages caused by: (a) failure to properly store the Product before installation, including the charge of batteries no later than the date indicated on the packaging; (b) shipping and delivery of the Product if shipping is FOB Factory; (c) neglect, accident, abuse, misuse, misapplication, or incorrect installation; (d) repair or alteration not authorized in writing by Company personnel or performed by an authorized Company Customer Service Engineer or Agent; (e) improper testing, operation, maintenance, adjustment, or modification of any kind not authorized in writing by Company personnel or performed by an authorized Company Customer Service Engineer or Agent; or (f) use of the Product under other than normal operating conditions or in a manner inconsistent with the Product's labels or instructions.

This Warranty is not valid if the Product's serial numbers have been removed or are illegible. Any Warranted Items repaired or replaced pursuant to this Warranty will be warranted for the remaining portion of the original Warranty subject to all the terms thereof.

Company shall not be responsible for any charges for testing, checking, removal or installation of Warranted Items.

COMPANY DOES NOT WARRANT EQUIPMENT NOT MANUFACTURED BY COMPANY. IF PERMITTED BY THE APPLICABLE MANUFACTURER, COMPANY SHALL PASS THROUGH SUCH MANUFACTURER'S WARRANTIES TO END-USER.

COMPANY DOES NOT WARRANT SOFTWARE, INCLUDING SOFTWARE EMBEDDED IN PRODUCTS, THAT IS NOT CREATED BY COMPANY. WITHOUT LIMITING THE FOREGOING, COMPANY SPECIFICALLY DOES NOT WARRANT SOFTWARE (SUCH AS LINUX) THAT WAS CREATED USING AN "OPEN SOURCE" MODEL OR IS DISTRIBUTED PURSUANT TO AN OPEN SOURCE LICENSE.

THIS WARRANTY IS THE SOLE AND EXCLUSIVE WARRANTY OFFERED BY COMPANY WITH RESPECT TO THE PRODUCTS AND SERVICES AND, EXCEPT FOR SUCH FOREGOING WARRANTY COMPANY DISCLAIMS ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY, TITLE, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE. CORRECTION OF NON-CONFORMITIES IN THE MANNER AND FOR THE PERIOD OF TIME PROVIDED ABOVE SHALL CONSTITUTE COMPANY'S SOLE LIABILITY AND END-USER'S EXCLUSIVE REMEDY FOR FAILURE OF COMPANY TO MEET ITS WARRANTY OBLIGATIONS, WHETHER CLAIMS OF THE END-USER ARE BASED IN CONTRACT, IN TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY), OR OTHERWISE.

LIMITATION OF LIABILITY: The remedies of the End-User set forth herein are exclusive and are the sole remedies for any failure of Company to comply with its obligations hereunder. In no event shall Company be liable in contract, in tort (including negligence or strict liability) or otherwise for damage to property or equipment other than the Products, including loss of profits or revenue, loss of use of Products, loss of data, cost of capital, claims of customers of the End-User or any special, indirect, incidental or consequential damages whatsoever. The total cumulative liability of Company hereunder whether the claims are based in contract (including indemnity), in tort (including negligence or strict liability) or otherwise, shall not exceed the price of the Product on which such liability is based.

Company shall not be responsible for failure to provide service or parts due to causes beyond Company's reasonable control.

END-USER'S OBLIGATIONS: In order to receive the benefits of this Warranty, the End-User must use the Product in a normal way; follow the Product's user's guide; and protect against further damage to the Product if there is a covered defect.

OTHER LIMITATIONS: Company's obligations under this Warranty are expressly conditioned upon receipt by Company of all payments due to it (including interest charges, if any). During such time as Company has not received payment of any amount due to it for the Product, in accordance with the contract terms under which the Product is sold, Company shall have no obligation under this Warranty. Also during such time, the period of this Warranty shall continue to run and the expiration of this Warranty shall not be extended upon payment of any overdue or unpaid amounts.

COSTS NOT RELATED TO WARRANTY: The End-User shall be invoiced for, and shall pay for, all services not expressly provided for by the terms of this Warranty, including without limitation, site calls involving an inspection that determines no corrective maintenance is required. Any costs for replacement equipment, installation, materials, freight charges, travel expenses or labor of Company representatives outside the terms of this Warranty will be borne by the End-User.

OBTAINING WARRANTY SERVICE: In the USA, call the Customer Reliability Center 7x24 at 800-356-5737. Outside of the USA, call your local Powerware product sales or service representative, or call the Customer Reliability Center in the USA at 919-870-3149. For comments or questions about this Warranty, write to the Customer Quality Representative, 3301 Spring Forest Road, Raleigh, North Carolina 27616 USA.

Ten-Year Pro-Rated Limited Warranty (US and Canada)

Powerware UPS Models: 5115, 5125, 5140, 9120, 9125, 9135, 9140, 9155, 9170+, and FERRUPS

WARRANTOR: The warrantor for the limited warranties set forth herein is Eaton Electrical Inc., a Delaware Corporation company ("Company").

LIMITED WARRANTY: This pro-rated limited warranty (this "Warranty") applies only to the original End-User (the "End-User") of any Powerware 5115, 5125, 5140, 9120, 9125, 9135, 9140, 9155, 9170+, and FERRUPS Products (individually and collectively, the "Product") and cannot be transferred. This Warranty applies even in the event that the Product is initially sold by Company for resale to an End-User.

WHAT THIS WARRANTY COVERS: In addition to the standard Two-Year Limited Warranty covering the applicable Product, the warrantor warrants that the Product will have a service life (defined below) of ten years from the date of purchase (the "Ten-Year Service Life") when used in accordance with the storage, handling, installation, operation and maintenance procedures prescribed in the Product's user's guide. "Service life" means the Product's ability to deliver at least 80% of its original rated backup time.

If Company finds, in its sole discretion, that any Product has not provided the Ten-Year Service Life, Company will, as its sole obligation and the End-User's sole remedy for Company's breach of this warranty, repair or replace the Product, at its option, F.O.B. Company's factory, for a charge, payable by the End-User to Company pro-rated on the following basis:

The End-User will be allowed a credit against Company's list price of equivalent equipment at the time of return of the Product to Company, in proportion to the percentage of Ten-Year Service Life remaining at the time of return of the Product to Company. In calculating the available credit, the remaining portion of the Ten-Year Service Life will be rounded up or down to the nearest whole year. The End-User will assume responsibility to pay the balance of the list price; and Company reserves the right to require payment prior to delivery of the repaired or replacement equipment.

For the avoidance of doubt, Company's responsibilities under this Warranty are as follows:

Years 1-2 - Product repaired or replaced pursuant to terms of Limited Warranty

Years 3-10 - Unit Credit ($) = Current List Price $\times$ $\frac{\text{Years of Unexpired Life}}{\text{10 Years of Warranted Life}}$

WHAT THIS LIMITED WARRANTY DOES NOT COVER: This Warranty does not cover any defects or damages caused by: (a) failure to properly store the Product before installation, including the charge of batteries no later than the date indicated on the packaging; (b) shipping and delivery of the Product if shipping is FOB Factory; (c) neglect, accident, abuse, misuse, misapplication, or incorrect installation; (d) repair or alteration not authorized in writing by Company personnel or performed by an authorized Company Customer Service Engineer or Agent; (e) improper testing, operation, maintenance, adjustment, or modification of any kind not authorized in writing by Company personnel or performed by an authorized Company Customer Service Engineer or Agent; or (f) use of the Product under other than normal operating conditions or in a manner inconsistent with the Product's labels or instructions.

This Warranty is not valid: (a) unless the End-User returns to Company the Warranty Registration Card within thirty (30) days of purchase; or (b) if the Product's serial numbers have been removed or are illegible. Any Warranted Items repaired or replaced pursuant to this Warranty will be warranted for the remaining portion of the original Warranty subject to all the terms thereof.

Company shall not be responsible for any charges for testing, checking, removal or installation of Warranted Items.

COMPANY DOES NOT WARRANT EQUIPMENT NOT MANUFACTURED BY COMPANY. IF PERMITTED BY THE APPLICABLE MANUFACTURER, COMPANY SHALL PASS THROUGH SUCH MANUFACTURER'S WARRANTIES TO END-USER.

COMPANY DOES NOT WARRANT SOFTWARE, INCLUDING SOFTWARE EMBEDDED IN PRODUCTS, THAT IS NOT CREATED BY COMPANY. WITHOUT LIMITING THE FOREGOING, COMPANY SPECIFICALLY DOES NOT WARRANT SOFTWARE (SUCH AS LINUX) THAT WAS CREATED USING AN "OPEN SOURCE" MODEL OR IS DISTRIBUTED PURSUANT TO AN OPEN SOURCE LICENSE.

THIS WARRANTY IS THE SOLE AND EXCLUSIVE WARRANTY OFFERED BY COMPANY WITH RESPECT TO THE PRODUCTS AND SERVICES AND, EXCEPT FOR SUCH FOREGOING WARRANTY COMPANY DISCLAIMS ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY, TITLE, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE. CORRECTION OF NON-CONFORMITIES IN THE MANNER AND FOR THE PERIOD OF TIME PROVIDED ABOVE SHALL CONSTITUTE COMPANY'S SOLE LIABILITY AND END-USER'S EXCLUSIVE REMEDY FOR FAILURE OF COMPANY TO MEET ITS WARRANTY OBLIGATIONS, WHETHER CLAIMS OF THE END-USER ARE BASED IN CONTRACT, IN TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY), OR OTHERWISE.

LIMITATION OF LIABILITY: The remedies of the End-User set forth herein are exclusive and are the sole remedies for any failure of Company to comply with its obligations hereunder. In no event shall Company be liable in contract, in tort (including negligence or strict liability) or otherwise for damage to property or equipment other than the Products, including loss of profits or revenue, loss of use of Products, loss of data, cost of capital, claims of customers of the End-User or any special, indirect, incidental or consequential damages whatsoever. The total cumulative liability of Company hereunder whether the claims are based in contract (including indemnity), in tort (including negligence or strict liability) or otherwise, shall not exceed the price of the Product on which such liability is based.

Company shall not be responsible for failure to provide service or parts due to causes beyond Company's reasonable control.

END-USER'S OBLIGATIONS: In order to receive the benefits of this Warranty, the End-User must use the Product in a normal way; follow the Product's operation and maintenance manual; and protect against further damage to the Product if there is a covered defect.

OTHER LIMITATIONS: Company's obligations under this Warranty are expressly conditioned upon receipt by Company of all payments due to it (including interest charges, if any). During such time as Company has not received payment of any amount due to it for the Product, in accordance with the contract terms under which the Product is sold, Company shall have no obligation under this Warranty. Also during such time, the period of this Warranty shall continue to run and the expiration of this Warranty shall not be extended upon payment of any overdue or unpaid amounts.

COSTS NOT RELATED TO WARRANTY: The End-User shall be invoiced for, and shall pay for, all services not expressly provided for by the terms of this Warranty, including without limitation, site calls involving an inspection that determines no corrective maintenance is required. Any costs for replacement equipment, installation, materials, freight charges, travel expenses or labor of Company representatives outside the terms of this Warranty will be borne by the End-User.

OBTAINING WARRANTY SERVICE: In the USA, call the Customer Reliability Center 7x24 at 800-356-5737. Outside of the USA, contact your local Powerware product sales or service representative, or call the Customer Reliability Center in the USA at 919-870-3149. Company will not accept any Product for return, credit or exchange unless expressly authorized by Company in writing and delivered FOB Company factory. For comments or questions about this Warranty, write to the Customer Quality Representative, 3301 Spring Forest Road, Raleigh, North Carolina 27616 USA.

Load Protection Guarantee (US and Canada)

Powerware UPS Models 3105, 5110, 5115, 5125, 9120, 9125, 9135, 9140, 9150, 9155, 9170+, and FERRUPS

GUARANTOR: The Guarantor for the load protection guaranty set forth herein is Eaton Electrical Inc., a Delaware Corporation company ("Company").

LIMITED GUARANTY: This load protection guaranty (this "Guaranty") applies only to the original End-User (the "End-User") of any Powerware 3105, 5110, 5115, 5125, 9120, 9125, 9135, 9140, 9150, 9155, 9170+, and FERRUPS Products (individually and collectively, the "Product") and cannot be transferred. This Guaranty applies even in the event that the Product is initially sold by Company for resale to an End-User.

WHAT THIS GUARANTY COVERS: For the lifetime of the Product, Guarantor promises to repair or replace, at Guarantor's option, the equipment (valued up to the limits shown below*) that is damaged by an AC power line surge, spike, or other transient when properly connected to Guarantor's uninterruptible power system ("UPS"). Reimbursement for or restoration of data loss excluded. This Guaranty applies only if all of the following circumstances arise:

1. The UPS is plugged into properly grounded and wired outlets, using no extension cords, adapters, other ground wires or other electrical connectors;
2. The installation of the UPS complies with all applicable electrical and safety codes described by the National Electrical Code (NEC);
3. The UPS was used under normal operating conditions and in accordance with all labels and instructions; and
4. The UPS was not damaged by accident (other than AC power line transient), misuse, or abuse.

*Cumulative Limits to be paid by Guarantor under this Load Protection Guaranty:

- $25,000 for Powerware UPS Model 3105
- $150,000 for Powerware UPS Models 5110, 5115, and 5125
- $250,000 for Powerware UPS Models 9120, 9125, 9135, 9140, 9150, 9155, 9170+, and FERRUPS products

WHAT THIS GUARANTY DOES NOT COVER: Any reimbursement or repair to End-User's equipment does not include reimbursement for or restoration of any data loss. This Guaranty does not cover any defects or damages caused by: (a) failure to properly store the Product before installation, including the charge of batteries no later than the date indicated on the packaging; (b) shipping and delivery of the Product if shipping is FOB Factory; (c) neglect, accident, abuse, misuse, misapplication, or incorrect installation of Product; (d) repair or alteration of Product not authorized in writing by Company personnel or performed by an authorized Company Customer Service Engineer or Agent; (e) improper testing, operation, maintenance, adjustment, or modification of any kind to the Product not authorized in writing by Company personnel or performed by an authorized Company Customer Service Engineer or Agent; or (f) use of the Product under other than normal operating conditions or in a manner inconsistent with the Product's labels or instructions.

This Guaranty is not valid: (a) unless the End-User returns to Company the Warranty Registration Card within thirty (30) days of purchase; or (b) if the Product's serial numbers have been removed or are illegible.

Company shall not be responsible for any charges for testing, checking, removal or installation of any items.

LIMITATION OF LIABILITY: THE REMEDIES OF THE END-USER SET FORTH HEREIN ARE EXCLUSIVE AND ARE THE SOLE REMEDIES FOR ANY FAILURE OF COMPANY TO COMPLY WITH ITS OBLIGATIONS HEREUNDER. EXCEPT AS OTHERWISE PROVIDED FOR IN THIS GUARANTY, IN NO EVENT SHALL COMPANY BE LIABLE IN CONTRACT, IN TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY) OR OTHERWISE FOR DAMAGE TO PROPERTY OR EQUIPMENT OTHER THAN THE PRODUCTS, INCLUDING LOSS OF PROFITS OR REVENUE, LOSS OF USE OF PRODUCTS, LOSS OF DATA, COST OF CAPITAL, CLAIMS OF CUSTOMERS OF THE END-USER OR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER. THE TOTAL CUMULATIVE LIABILITY OF COMPANY HEREUNDER WHETHER THE CLAIMS ARE BASED IN CONTRACT (INCLUDING INDEMNITY), IN TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY) OR OTHERWISE, SHALL NOT EXCEED THOSE SET FORTH ABOVE.

Company shall not be responsible for failure to provide repair or replacement under this Guaranty due to causes beyond Company's reasonable control.

END-USER'S OBLIGATIONS: In order to receive the benefits of this Guaranty, the End-User must use the Product in a normal way; follow the Product's operation and maintenance manual; and protect against further damage to the Product if there is a covered defect.

OTHER LIMITATIONS: Company's obligations under this Guaranty are expressly conditioned upon receipt by Company of all payments due to it (including interest charges, if any). During such time as Company has not received payment of any amount due to it for the Product, in accordance with the contract terms under which the Product is sold, Company shall have no obligation under this Guaranty.

COSTS NOT RELATED TO GUARANTY: The End-User shall be invoiced for, and shall pay for, all services not expressly provided for by the terms of this Guaranty, including without limitation, site calls involving an inspection that determines no corrective maintenance is required. Any costs for replacement equipment, installation, materials, freight charges, travel expenses or labor of Company representatives outside the terms of this Guaranty will be borne by the End-User.

TO MAKE A CLAIM: In the USA, call the Customer Reliability Center 7x24 at 800-356-5737. Outside of the USA, contact your local Powerware product sales or service representative, or call the Customer Reliability Center in the USA at 919-870-3149. For comments or questions about this Load Protection Guaranty, write to the Customer Quality Representative, 3301 Spring Forest Road, Raleigh, North Carolina 27616 USA.